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THESIS

on

ELECTRO-NARCOSIS IN THE TREATMENT OF SCHIZOPHRENIA

by

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1949

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The appendix consists of case reports on the 105 schizophrenics treated by electro-narcosis. The cases are numbered in the order in which they were selected for treatment, i.e., approximately chronologically. Case 105 is an exception as the record sheet was not available while compilation was in progress. This report was therefore added later.

The case reports are arranged in categories according to results, for ease of reference.



## INTRODUCTION AND HISTORICAL SURVEY.

Introduction.

The work described in this thesis was undertaken as a result of the difficulty, in post-war conditions, of providing insulin shock treatment on an adequate scale in West Kent. A possible alternative was first suggested by an article on electro-narcosis by Tietz et al (1946), who claimed results in the treatment of schizophrenia comparable to those achieved by insulin shock. No step, however, was taken until encouraging results had been reported by Paterson and Milligan (1947), and a further paper published by Tietz (1947).

The proportion of recoveries claimed by Tietz et al (1946) and Tietz (1947) was impressive, but the absence of controls and the brevity of case-histories made it difficult to assess results accurately. Had the shortage of beds for insulin therapy been less serious, I should not have started electro-narcosis without stronger evidence in its favour than that available at the end of 1947. As things were, however, the findings of the workers mentioned above seemed promising enough to justify trying their method in an exploratory spirit.

In my view, the first thing to be done was to obtain an adequate control series with which to compare results. As a start towards providing such a series, I made a survey of 557 cases of schizophrenia admitted to Barming Heath Hospital in the 10 years prior to the introduction of shock therapy. I then started treatment by electro-narcosis in January 1948. In all the work

done I have kept two objects in view; to refine the technique in any way which promotes safety, comfort and therapeutic efficiency, and to compare the results with the control series and relevant figures published by other workers, in order to evaluate the effects of electro-narcosis as accurately as possible. I carried out 2443 treatments on 152 patients between 29/1/48 and 19/2/49. The majority of the patients were schizophrenics, but I treated a number of resistant depressions and some patients suffering from intractable and disabling neuroses. In the year starting on 29/1/48, the treatment of 105 schizophrenics was completed. This thesis is chiefly concerned with the experience of treating this group by means of electro-narcosis.

## HISTORICAL SURVEY.

### 1). Experimental Development.

The electrical induction of narcosis was first undertaken while exploring the possibilities of electricity as an anaesthetic agent. Ledue (1902) described the production of a dream-like state with a unidirectional pulse current. He used a square shaped wave with a frequency of 100 per second, the relationship of wave to interval being 1 : 9. As he placed the anode on the sacrum and the cathode on the vertex, the heart was included in the circuit. He could therefore use small currents only, of 1 to 8 milliamperes (mA). Leclerc (1910) described two operations on patients anaesthetised in this way, but the method was never

applied on a large scale. Interest remained desultory until the introduction of shock therapy in psychiatry.

Leduc's findings were confirmed by Neergaard (1922) and Zimmermann (1929). His belief that electrical narcosis could only be produced by pulse currents was, however, proved wrong by Tehagowetz (1912), who showed that it could be produced by direct currents. Silver (1939) confirmed the findings of Tehagowetz. In 1934, the year in which Meduna described metrazol convulsion therapy, Van Harreveld and Kek showed that alternating current produced a narcotic state in animals. A relatively strong current was applied at first, resulting in a sustained tonic contraction. The current was then lowered to a level which permitted respiration, and subsequently increased slowly to enable the narcotic state to be prolonged.

Van Harreveld, Plesset and Wiersma (1940) described the production of electro-narcosis in dogs with pulsating, alternating and direct currents. They showed that alternating and pulsating currents were equally effective; with both, a wide range of frequencies could be used. With alternating current, maximum economy of current was achieved at 100 cycles per second, but only a very small increase was required if the frequency was lowered to 30 cycles per second. Direct current was much less effective and caused contortion of the neck and rolling movements.

These authors threw light on the mechanism of



electro-narcosis. They determined the relation between the pulse duration and the pulse strength required to produce a standard depth of narcosis. They found that this relation closely resembled the strength-duration curves of peripheral nerves. Then, using alternating currents, they found that the relation between the frequency and the current strength necessary to maintain the standard depth of narcosis resembled the paramagnetic curves obtained for peripheral nerves. These facts, combined with the findings regarding direct currents, led to the conclusion that electro-narcosis was due to the stimulating effect of the current applied. The short chronaxie of electro-narcosis ( 0.12 - 0.16 milliseconds) indicated that highly excitable structures, namely nerve fibres or cells, were being stimulated.

To account for the production of narcosis by stimulation, it was suggested that inhibitory and excitatory structures were equally stimulated, and that in such conditions inhibition would prevail. The possibility of electro-narcosis being due to Wedensky inhibition was also considered, but regarded as less likely.

Van Harreveld, Tyler and Wiersma (1943) studied the metabolism of the brain before, during and after electro-narcosis, by measuring the decrease in oxygen content of the blood during its passage through the central nervous tissue, and by measuring the amount of blood flowing through the brain. They concluded that electro-narcosis differed greatly

from chemical narcosis, as it did not cause large changes in brain metabolism.

Globus, Van Harreveld and Wiersma (1943) showed that there were no pathological alterations in the brains of dogs subjected to electro-narcosis, even though the current levels used were high enough to have caused the symptoms of electro-shock, if the duration had been brief. They concluded that pathological changes in the brain after electro-shock could not be due to the passage of the current.

In addition to their description of electro-narcosis in man, considered below, Frostig et al (1944) showed that in intact dogs vagus effects predominated in the early stages of electro-narcosis, to be replaced by sympathetic effects later on. They also described findings related to blood pressure, later confirmed and elaborated by Van Harreveld and Dandliker (1945). These authors, using rabbits, showed that there was an initial drop in blood pressure due to vagal inhibition of the heart. This fall did not occur after vagal section, and was reduced by injection of atropin. Within 30 seconds of the start of treatment the blood pressure reached its peak due to sympathetic stimulation, and fell below its pre-narcotic level when the current was reduced. This fall was held to be due to diminished power of sympathetic response following the high initial current level. The rise to a second peak about 2 to 3 minutes from the start was said to indicate return of the



power of sympathetic response. Crossed circulation experiments showed that the rise in blood pressure was only negligibly due to hormones, and could therefore be regarded as the direct result of nervous stimulation.

## 2). Clinical Application of Electro-narcosis.

Frostig et al (1944) described the first application of electro-narcosis to man as a psychiatric procedure. They gave 100 treatments to 9 patients, all of whom had shown signs of dementia praecox for over 4 years. As they placed both electrodes on the head they could use much stronger currents than was possible with Leduc's method. Alternating current of a frequency of 60 cycles per second was used. The main features of the technique described by Frostig et al have become standard practice, namely the high initial current level maintained for 30 seconds, the fall until breathing was established, and the subsequent slow rise to maintain narcosis.

These authors confirmed the finding of Van Harreveld, Plesset and Wiersma (1940) that two kinds of electro-narcosis occurred in dogs, called the narcotic and hyperkinetic types. The phenomena in man consisted of a combination of the features of both varieties. Interesting effects were noticed with different electrode positions. Low placement caused profuse secretion of saliva and tears, which became scanty or absent if the electrodes were high on the head. Occipital positions caused greater

impairment of respiration than frontal ones. The general similarity between the initial symptoms of electro-narcosis and electro-shock were noted, with certain differences. The atonic period between the initial flexion and the development of extensor rigidity was momentary or absent, instead of lasting 20 to 30 seconds, and the extensor rigidity lasted until the current was reduced instead of being self-limited.

Tietz, Thompson, Van Harreveld and Wiersma (1946) described the application of electro-narcosis to a group of early schizophrenic patients with predominantly paranoid symptomatology. They gave details of the technique employed and the reactions observed. Interesting points were the use of a temporal position of the electrodes and a starting dose of 160 mA to 260 mA. They also gave an account of the electro-encephalographic changes found in association with electro-narcosis. After treatment, slow waves occurred for approximately one hour. With the repetition of treatment these dysrhythmic patterns tended to persist. Although dysrhythmia was often present in recovered patients, it was not essential if a complete remission were to occur. Cerebral dysrhythmias were less frequent and less severe if the patient were given 10 milligrammes of thiamin and 50 milligrammes of niacin by mouth, daily.

In all, these workers treated 47 patients and claimed striking results. As these claims so strongly influenced my decision to use electro-narcosis, I

append an extended account of them.

After treatment, patients were rated in four categories, as follows:-

- A. Recovery with insight.
- B. Social recovery with retention of some schizophrenic features.
- C. Some improvement.
- D. Failure.

The 47 patients were divided into 6 groups:-

- I. 14 patients with a first acute attack of no more than 3 months duration.
- II. 5 patients with an acute attack, who had had one or more additional episodes, all occurring within the previous two years.
- III. 13 patients who in a period of two years or less had shown a gradual development of their symptoms.
- IV. 5 patients who had had 2 or more attacks, the first occurring more than two years previously.
- V. 5 patients who had been continuously psychotic for more than two years.
- VI. 5 patients whose histories revealed that they had never made an adequate adjustment because they had a mental defect, or feeble-mindedness, a psychopathic personality, or organic damage of the nervous system.

The results were tabulated as follows:-

Group.	I.	II.	III.	IV.	V.	VI.
No of patients.	14	5	13	5	5	5
Form of Schizophrenia.						
Paranoid.	3	1	9	2	3	0
Paranoid and Catatonia.	7	3	0	2	0	2
Paranoid and Hebephrenia.	4	1	4	1	2	3
Average time since onset.	5w	3w	10m	6m	3½y	1m
Rating at 1 month.	A. 9	3	6	1	0	0
	B. 3	2	5	1	3	2
	C. 1	0	0	2	0	2
	D. 1	0	2	1	2	1
Rating at 6 months.	A. 7	4	7	1	0	0
	B. 3	0	1	0	3	1
	C. 1	0	1	0	0	0
	D. 2	1	3	3	2	3.

To continue the story of electro-narcosis in America, Tietz (1947) discussed numerous points of technique and described the results of treatment in a further 46 cases, who had received 710 treatments. 14 out of 18 schizophrenies made a grade A recovery, including one who had made no response to 23 electric shocks. 9 out of 13 psychoneurotics did well, although all had shown little response to prolonged psychotherapy. 6 patients with paranoid



involutional states were little improved, but 7 with attacks of recurrent depression did well. In 1948 Tietz made a film entitled "Electro-Narcosis Therapy, which was shown privately in London in October 1948. In this the glissando technique, described below in the appropriate section, was demonstrated, and the author stated her personal belief in the value of the treatment.

In the meantime Medlicott (1947) had published the results of treatment by electro-narcosis in 50 schizophrenics together with various physiological observations. He found that the blood pressure began to climb after resumption of respiration and maintained a high but fluctuating level until the end of treatment when it fell substantially at once, and then more slowly to reach the pre-narcotic level 15 minutes after the start of treatment. Blood sugar curves showed a rise during treatment itself; after switching off the current the rise continued until 10 to 30 minutes after the start of treatment. The level then began to fall and reached the pre-narcotic value in 1 to 3 hours after the start of treatment. Lymphocytes showed a steady rise during electro-narcosis, to reach their peak 10 minutes after the end. No significant changes were found in the level of non-protein nitrogen in the blood. The results were not compared with a control series, but 53% of recoveries were claimed in patients who had been ill for less than 6 months, and 27.3% in patients whose disorder had lasted between one and



two years. Simple and hebephrenic types were said to be resistant to treatment, while good results were claimed in the paranoid group with well-developed delusional states and a prognosis considered to be unfavourable. Electro-narcosis was said to have no advantage over electrical convulsive therapy (E.C.T.) in schizophrenic reactions and acute atypical schizophrenias. Medlicott (1948) described the results of treatment in further cases and came to the conclusion that electro-narcosis was of no greater value than E.C.T. in schizophrenics apart from the paranoid group mentioned above.

Meanwhile, in this country Paterson and Milligan (1947) had described the technique of treatment with the Shotter-Rich apparatus. With British caution they only claimed "distinctly promising results" in the treatment of 20 schizophrenics. Paterson (1948a) described the glissando technique and summarised the results in the first 50 patients he had treated. He claimed that some cases of severe agitation and mental tension cleared up with electro-narcosis after E.C.T. had failed, and hoped that electro-narcosis would consequently save many patients from leucotomy. He indicated that some patients became accessible to psychotherapy as a result of the treatment. Although he did not regard electro-narcosis as a substitute for insulin coma therapy, he had obtained good results with it when insulin treatment was not feasible.

Paterson (1948b) again discussed the technique

and results of electro-narcosis. In regard to the former he advised premedication by thiopentone if possible, and preferably with curare as well. He considered results in relation to schizophrenia, states of severe depression and psychoneurotic conditions. Of 35 schizophrenics treated, 9 had had a former schizophrenic episode from which they recovered. Within three months, 8 were back at work though one still had residual symptoms. 10 patients who had been ill for less than a year were treated; 9 returned to work although two still showed mild symptoms. 16 patients with an average duration of illness of 3.2 years were also treated. 7 returned to work with 3 still showing mild symptoms. The other 9 were all greatly improved. 14 schizophrenics who had made no response to E.C.T. were given electro-narcosis; 6 recovered and 3 improved. Paterson considered that there was a synergic action between the two forms of treatment. Of 16 cases of severe depression, 13 of whom had not responded to E.C.T., 12 made a complete recovery after electro-narcosis, and only one failed to improve.

Milligan (1948) claimed that of 60 adolescent and adult schizophrenics treated by electro-narcosis, complete remissions occurred in 52%, and social recoveries in 20%. He emphasised the importance of the duration of illness before treatment. He claimed 100% of complete remissions in cases of less than one year's duration, but only 34% in cases of more than 5 years duration.

### 3). Related Developments in Psychiatric Shock Therapy.

The fact that an electrical current can be used to produce narcosis might well have remained in scientific limbo but for the development of shock treatments in psychiatry. The history of these is well known and need not be repeated in detail here. Electro-narcosis is evidently most nearly related to electrical convulsive therapy (E.C.T.) originally introduced by Cerletti and Bini (1938) and then rapidly developed on both sides of the Atlantic. Certain aspects of that process have an interesting bearing on electro-narcosis. Insulin shock therapy, on the other hand, is quite different to electro-narcosis in its mode of action. There is little developmental relationship between the two, though their relative efficacy and spheres of action await accurate determination.

The first interesting point in the relationship between E.C.T and electro-narcosis is that E.C.T. failed to fulfil its early promise as a treatment for schizophrenia. Recognition of this fact was clearly expressed by Hemphill and Walter (1941). Henderson, Tod and Daly (1943) considered that only "fair results" were to be expected in schizophrenia, and then only in the early stages of the illness. The field was therefore left open for new candidates in the search for the philosophers' stone of psychiatry, an effective treatment for schizophrenia.



Certain physiological observations by Golla, Walter and Fleming (1940) and Hemphill and Walter (1941) had an important bearing on electro-narcosis. The former workers pointed out that the current required to stimulate the human cortex when exposed at operation was of the order of 10 milliamperes. The resistance of the skull and scalp attenuated one hundredfold the spontaneous electrical activity of the brain recorded by the electro-encephalograph. It had a similar effect on any current passing in the reverse direction. Therefore a current of 500 to 1000 mA was required to produce maximal stimulation of the brain from electrodes placed on the scalp. From these findings it would appear most improbable that the narcosis produced by Ledue was due to electrical stimulation of the brain alone. It is ironical to think that the lead given by his work may have been due to a misinterpretation of his findings.

Golla, Walter and Fleming (1940) also described the lowering of the resistance of the skull and scalp caused by the passage of an electric current through them. This negative resistance characteristic of the human head posed one of the main technical problems which had to be solved before electro-narcosis became feasible. An apparatus had to be designed, capable of delivering a current whose strength would remain constant no matter what changes occurred in the resistance of the circuit which included the patient's head.

Hemphill and Walter (1941) said that in animals

an electrical stimulus had to be of a certain strength to produce a convulsion, and that this convulsion level was considerably above what might be called the threshold for cortical stimulation. This concept appeared to link with the finding of Van Harreveld, Plesset and Wiersma (1940) that electro-narcosis was due to stimulation of the brain. There appeared, at any rate in theory, to be a possibility of stimulating the brain strongly enough to produce narcosis without causing convulsions at all. In this connection, Hemphill and Walter (1941) made another pertinent statement, that over-ventilation or carbon dioxide deficiency favoured the induction of fits, while holding the breath or breathing carbon dioxide had the reverse effect. On the strength of this pronouncement I continued to use 5% carbon dioxide mixed with oxygen during electro-narcosis, in spite of its tendency to freeze in the cylinder valve and make the flow of gas intermittent.

My desire to cut out convulsive phenomena was not merely aesthetic or humanitarian, though it owed much to these motives. Alpers and Hughes (1944) described subarachnoid haemorrhages and haemorrhages of the brain after E.C.T. in cats. Heilbrunn and Weil (1942) found that 16 out of 28 rabbits given E.C.T. became paralysed, while only in 3 of the remaining 12 was there no pathological change. In all the others there were haemorrhages in the brain stem, the spinal cord and the meninges of the brain



and cord, due to ruptures of capillaries and small veins. In the discussion on Heilbrunn and Weil's paper, Dr Levy of Chicago said that a patient of his had died of heart failure after E.C.T.. Changes were difficult to evaluate owing to heart failure effects, but there was a considerable number of dilated capillaries with haemorrhages which undoubtedly antedated the acute myocardial failure, as indicated by the presence of blood pigment. Ebaugh, Barnacle and Neuberger (1943) described the post-mortem findings in two patients receiving E.C.T.. Both cases showed rather widespread, but not serious histological changes in the brain. The first showed small areas devoid of nerve cells, or containing ghost cells, mainly in the frontal and temporal lobes. Glial proliferation was noted. Diffuse degeneration of nerve cells occurred in the cortex, resulting in an irregular appearance of the architecture of the cortex. In the second case the cortical architecture was fairly well preserved, but there were areas with pale cells, or cells showing frank ischaemic change.

There was, therefore, strong evidence in favour of the contention that E.C.T. produced cerebral damage. The work of Globus et al (1943) showed that the passage of electric current was not responsible for the damage. The explanation of Heilbrunn and Weil (1942) therefore appeared the more probable. They considered that the damage was due to capillary haemorrhages caused by the

sudden rise of arterial blood pressure during muscular contraction, to the vasospasm of the peripheral arteries following cessation of the electrical stimulation, and the stasis in the venous system which was aggravated by cessation of respiration for several seconds. In their view, the damage in the brain was therefore due to the convulsion.

#### 4). Summary of the Historical Setting.

While the work reported in this thesis was being carried out, encouraging accounts of the therapeutic possibilities of electro-narcosis were appearing. Controls, however, were notably absent, and full histories were only available in two cases. Three main spheres of promise had been mapped out, in the treatment respectively of schizophrenia, severe depressions and psychoneuroses. For the reasons stated in the introduction, I chose to investigate the first of these most fully, without entirely neglecting the other two. In the realm of technique, sound scientific considerations as well as decent sentiment lent weight to the belief that the elimination of convulsive phenomena would benefit the patient if it could be achieved without loss of therapeutic efficiency.

## TREATMENT.

### The Apparatus.

I used the Shotter-Rich Electro-Narcosis apparatus, of which Paterson and Milligan (1947) published a photograph and full description. A detailed specification was also issued by the makers, the Malme Electro-Medical Laboratories Ltd (1948).

In actual use, the operator turns a rotary control which enables him to pass any chosen intensity of current between zero and 250 milliamperes (MA) through a circuit which includes the patient's head. As the passage of an electric current through the head results in a rapid fall in the resistance of the tissues (Golla, Walter and Fleming, 1940), a compensating mechanism is included in the apparatus to ensure that changes in the resistance of the patient's tissues do not alter the intensity of the current passing through his head. This intensity is recorded on an ammeter, and can be altered at any time by the operator. Contact with the patient's head is maintained by Electrodes smeared with jelly. These Electrodes are held in place by a rubber band, along which they can be moved in a frontal or temporal direction.

### Arrangement of the Treatment Unit.

Most patients wait for treatment in comfort in a ward day-room, but those being nursed in bed stay there until their turn comes. The treatment room is out of

earshot of waiting patients. It opens on a gallery containing beds to which patients are carried on stretchers after treatment. The antiquated architecture of Barming Heath Hospital prevents the use of trolleys but provides thick, sound-proof walls, so patients neither see nor hear those who precede them until their own treatment is finished. A nurse is present in the gallery while patients are resting there after treatment.

The treatment room itself contains a firm couch, a table for the Electro-Narcosis apparatus, several chairs and a trolley for trays and instruments. The following equipment is always present during treatment:-

Two Cylinders of oxygen with 5% carbon dioxide (carbogen) of 110 cu. ft. capacity. One is fitted ready for use with a pressure gauge, rubber tubing, rubber bag, three-way-cock and face mask; the other is a spare.

A cylinder of oxygen (22 cu. ft.) fitted in the same way as the carbogen cylinder, with the addition of a harness to attach the face-mask to the head is also available in case prolonged artificial ventilation of the lungs should have to be undertaken. This cylinder is fixed on a wheeled frame which can be pushed to the after-treatment gallery.

A "Hanovia Timer" is attached to the wall where it can easily be seen by the operator. This records the passage of time in minutes and rings a bell at the end of a pre-determined period.

The instrument trolley is equipped with a variety



of trays, bowls and receivers, syringes of 20 ml, 10 ml, 2 ml and 1 ml capacity, with a variety of needles for giving intravenous or subcutaneous injections. Supplies of soluble thiopentone, sodium amytal, d-tubocurarine chloride, "Prostigmine" and coramine are also provided. Surgical spirit, swabs and a tourniquet are required for giving intravenous injections. It is advisable also to have a stethoscope, a Sphygmomanometer, a tube of Ethyl chloride for general anaesthesia, a stopwatch and an assortment of catheters suitable for use as nasal airways.

A gag is essential during Electro-narcosis to prevent the patient biting his tongue and to keep an airway open when the jaw is clenched. A rubber ring pessary serves well for a patient with good teeth. Assorted sizes should be available, each with a strip of bandage attached to assist removal if one should slip too far back in the mouth. For Edentulous patients I designed a gag made from standard half-inch brass tubing surrounded by 20 gauge rubber tubing. It is three inches long and is drilled at one end to take a loop of brass wire, to which a length of bandage can be attached. Ordinary anaesthetic airways are useful if thiopentone is used, but not otherwise. I have not found it necessary to use a saliva suction apparatus of the type described by Tietz et al (1946) and demonstrated by Tietz (1948) in a film.

To minimise difficulties arising from Electricity "cuts", a lead was taken from the main hospital feeder to a plug in the treatment room. The use of other electrical equipment in the hospital cannot diminish the amount of



current available for Electro-narcosis.

### Preparation of the Patient.

No food or drink may be taken during the four hours preceding treatment. At a convenient time an enema is given and the patient is taken to empty the bladder. Half an hour before treatment, atropin gr. 1/60 is given subcutaneously. At the same time apprehensive patients receive sodium amytal gr. 6 by mouth. Finally false teeth are removed, and in women metal hairpins are taken away. Cosmetics on cheeks, lips or nails are not allowed.

### Standard of Physical Fitness.

When starting Electro-narcosis I assumed that a patient fit to undergo E.C.T. should be able to tolerate Electro-narcosis. This principle was later confirmed by Paterson (1948<sup>a</sup>). The criteria of fitness for E.C.T. which I was using were essentially those of Hemphill and Walter (1941), who defined the contraindications as follows:- Pyrexia; any severe heart lesion; recent tuberculosis; any organic disease of the central nervous system; any important bodily illness; more than a slight degree of albuminuria and a concurrent course of prophylactic vaccine inoculations.

Tietz et al (1946) and Paterson and Milligan (1947) stated that an Electro-encephalogram should be obtained in patients with a family history of convulsive disorder. The

need for this precaution was accepted, but in fact no patient in this category was sufficiently co-operative for the examination to be carried out.

Paterson and Mulligan (1947) regarded it as desirable to have an Electrocardiogram and a radiogram of the chest and spine in all cases before starting Electro-narcosis. I found this hardly practicable and only asked for special examinations when physical investigation aroused suspicion of the presence of disease.

During early treatments by Electro-narcosis, several patients suffered respiratory embarrassment owing to bleeding gums. A dental examination was made an essential preliminary to treatment in all subsequent patients.

### Technique of Treatment.

Accounts of the technique of Electro-narcosis and the phenomena encountered during treatment have been published by Frostig et al (1944), Tietz et al (1946), Paterson and Mulligan (1947) and Tietz (1947). Films have been made by Paterson and by Tietz (1948). The reactions of my patients before I adopted thiopentone anaesthesia were exactly as described by these authors.

At the start of treatment a current of 180 or 200 MA was applied for 30 seconds. An immediate tonic flexion of the spine and extremities occurred. After about 10 seconds there was a momentary atonia followed by extension of the limbs and spine. The pulse disappeared for a few seconds after which the heart beat

slowly and irregularly. Respiration was arrested and the patient often became cyanosed. At this stage flushing of the face, neck and chest, pilomotor reactions and erection of the nipples were commonly seen. The pupils were contracted and fixed, and conjugate deviation was frequently noted.

After 30 seconds the second stage of treatment was begun by reducing the current to about 70 MA. A few clonic twitches occurred. After 15 seconds the patient gasped and thereafter breathed regularly. Carbogen was administered as soon as the current was reduced. Once breathing was re-established the current was raised by about 5 MA every 15 seconds until the characteristic signs of an adequate depth of narcosis appeared, namely inspiratory stridor and flexion of the arms. The level of current which produced these signs was known as the "coma dose". Once this was reached the current level was left unchanged, or slowly raised if required until 7 minutes from the start of treatment, when the current was switched off to terminate the narcosis.

During the later stages perspiration, salivation, lachrymation and pilomotor reactions were often noted. During the early stages the tendon reflexes disappeared, but later on re-appeared or became exaggerated. The plantar reflex was either unobtainable or extensor during the whole period of treatment. The occurrence of restlessness, righting movements and forced grasping indicated that the depth of narcosis was becoming inadequate. Owing to limited resources I could only



take blood-pressure records in patients with known cardiovascular abnormalities. These findings were felt to be out of place in a description of the usual phenomena of Electro-narcosis.

The number of treatments given depended on the progress of the patient, the shortest completed course consisting of four, and the longest of forty-one. Treatments were usually given three times a week.

Paterson (1948<sup>a</sup>), Paterson and Milligan (1948<sup>b</sup>) and Tietz (1948) described an advance in technique generally known as the "glissando" method of treatment. When this is used the current is raised from zero to the chosen first-stage level in three seconds, instead of being switched on instantaneously. During the second stage the reduction of current to 70 MA is spread over 15 seconds, instead of 3 to 5. At the end of treatment the current is reduced from the coma level to zero in three seconds instead of being switched off suddenly. In my experience the glissando technique reduced the force and rapidity of the initial flexor spasm and lowered the frequency and amplitude of the clonic movements in the second stage. On the other hand, it probably increased the likelihood of memory of the initial shock,

I started using intravenous thiopentone anaesthesia in all patients in order to ensure complete amnesia for the treatment, but soon found it useful in other ways. Restlessness was reduced, but in other respects the characteristic features of Electro-narcosis were easily recognisable and the therapeutic effect was unimpaired.

The initial flexion of the spine was transformed into a slow, gentle process, insufficient in many cases to lift the patient's head off the couch. In many patients the phase of extensor tone during the first stage was eliminated. In such cases flexor tone of the arms, extensor tone of the legs and arrest of respiration persisted throughout the first stage. During the second stage the muscular tone diminished gradually without clonic movements.

The routine administration of thiopentone proved quite feasible, even in a busy, understaffed mental hospital, where many patients had to be treated in a limited time. In my opinion its use was a big advance in technique. Without it, I would in no circumstances administer electro-narcosis with the apparatus at present available.

The intravenous dose of thiopentone required to produce satisfactory anaesthesia varied between 0.25 and 0.8 gramme. To minimise trouble from sensitivity to the drug, a small dose, usually 0.25 Gm. was given before the first treatment, and increased on subsequent occasions if required. Plenty of carbogen was administered as early in treatment as possible, sometimes even before applying the current, in view of the statement by Halton (1947) that "Intravenous thiopentone, in clinical dosage, is relatively innocuous and is rapidly eliminated but there is irrefutable evidence to show that it is a potent poison to the heart muscle in the presence of anoxaemia, with or without cyanosis". If venous

sclerosis made intravenous injection impossible, rectal thiopentone was a satisfactory alternative. Double the intravenous dose was given in 30 ml of water. If the patient was still conscious when treatment was due to start, a small inhalation of Ethyl chloride remedied this safely and effectively.

Tietz et al (1946) advocated using a temporal position of the Electrodes during each patient's first treatment. They suggested placing the electrodes further forward on subsequent occasions if stridor appeared too early, or further back if an inadequate degree of narcosis occurred. They thus indicated that in practice, a forward position of the electrodes produced an effect equivalent to a reduced dose of electricity, while a temporal position had the reverse effect. I found it convenient to utilise this fact by starting each treatment with the electrodes on the forehead, moving them temporally when breathing was established. The characteristic signs of adequate narcosis then rapidly appeared.

#### The Use of Muscular Relaxants.

The need for muscular relaxants such as curare and myanesin was small, owing to the degree of control exercised by thiopentone over violent muscular movements. In only five patients was protection additional to thiopentone felt to be necessary; three of these had previously suffered spinal injuries, one had injured the



left brachial plexus and one had osteo-arthritis of the spine. Three were given myanesin 15 ccs. intravenously after pentothal anaesthesia had been induced. The muscular relaxation was good and respiratory depression absent, but venous thrombosis occurred invariably at the site of injection. By the eighth treatment at latest only small veins were left patent, leakage occurred into the tissues and severe inflammatory reactions occurred in all three patients. Curare was given to the other two patients in the form of d-tubocurarine chloride, in 15 milligramme doses. Venous thrombosis did not occur but respiratory depression was more severe than with myanesin. Curare was clearly the preferable drug for repeated administration.

One case of old spinal injury was treated with thiopentone alone, quite successfully. Caplan (1946) contended that sudden flexion of the spine was the most important factor in causing fractures during convulsions. Thiopentone probably exercised its protective action by diminishing the flexor spasm of the spine at the beginning of Electro-narcosis.

#### The Problem of Dosage.

The main difficulty is simply stated; with the apparatus at present available, the dose of Electricity necessary to ensure unconsciousness and amnesia is sufficiently large to cause injury in some cases. One way to deal with this situation is to give large enough doses to abolish memory while using protective techniques

to avoid injury. Another is to use drugs to supplement the deficiencies of electricity as a narcotising agent, while keeping the dose low enough to avoid injury.

Tietz and her co-workers have clearly chosen the first alternative. Tietz (1947) stated that the doses recommended by her in 1946 (Tietz et al) were too low; she advocated using 200 MA in the first stage, while using curare to prevent injury. In her film (1948) she showed 250 MA being given in the first stage, and 200 MA in the coma stage, to women of average size, the glissando technique being relied on to prevent injury.

I chose the second alternative after one patient sustained a fracture of the articular process of a dorsal vertebra, and two suffered from torn muscles, even though the glissando technique was used. I rejected curarisation as unjustifiable without anaesthesia in psychiatric patients. Thiopentone had the double advantage of ensuring amnesia and affording a degree of protection from injury. A first-stage dose sufficient to arrest breathing for 30 seconds at least proved adequate to ensure amnesia and prevent injury.

#### Teamwork in Treatment.

As the operator cannot manipulate the apparatus and observe every detail of the patient's reactions, it is essential for him to be supported by a team of nurses trained to report significant facts instantly. In such conditions, one doctor can carry out the treatment

safely, except when curare is being used or difficulties are anticipated. In ordinary circumstances, five nurses are required, of whom two should be experienced and of senior status. The other three can be senior students, but if one is a qualified nurse, so much the better.

The organisation of the Barming Heath team has been studied by many visitors and a similar arrangement has been adopted by two large hospitals in the London area. The senior nurse present administers the carbogen, and is, of course, in charge of the team from the nursing standpoint. The other senior nurse prepares the thiopentone for intravenous use, applies the headband and sees that the electrodes do not shift once the doctor has adjusted them. The most experienced of the three junior nurses feels the patient's pulse throughout treatment. She is instructed to report irregularity, change in volume or increase in rate above 120 per minute. If in doubt, she can ask for the opinion of the second senior nurse, who should be able to free one hand at any time if required. One of the two remaining nurses is posted in the gallery where patients come round after treatment. The other works the Hanovia Timer in the treatment room, controls the patient's movements in the event of restlessness and is at the disposal of the nurse in charge for any job which may become necessary.

#### Adjuvants.

All patients capable of sufficient co-operation were given occupational therapy during and after their



course of Electro-narcosis. The occupational therapists soon reported improvements shown by several patients. As experience accumulated it became clear that many patients were rendered more willing to learn. They were ready to be shown how to set about their tasks; they showed a greater appreciation of their mistakes and shortcomings, but were ready to try and overcome them in a realistic way. These reactions contributed largely to rehabilitation. Patients treated by electro-narcosis were not given any facilities or attention which were not equally available to other patients in the occupation department.

Paterson (1948<sup>a</sup>) said that some of his patients who had been unable to discuss their mental conflicts before treatment, were able afterwards to pour out an account of their difficulties. They were thus able to benefit from psychotherapy, which otherwise would have been impossible. I was frequently able to establish rapport with patients shortly after treatment, although this was impossible at other times. This advantage could not be followed up by intensive psychotherapy, but was used to implant encouraging suggestions and to strengthen the patient's confidence in the measures being taken for his rehabilitation.

Intensive vitamin therapy as described by Tietz et al (1946) was not used; patients requiring vitamins were given them in usual doses.

### The Pattern of Response to Treatment.

Most of the patients who did well showed, during the weeks of treatment, a slow steady progress which was well maintained. A small number dramatically improved after four or five treatments. Some of these remained well, but relapse was commoner than among patients who improved slowly. More than one patient made a rapid improvement, relapsed rapidly and then improved slowly during a subsequent course. I formed the impression that patients with a history of recurrent schizophrenic episodes, and those in katatonic stupor were the ones who commonly made a rapid response. Most of the patients who remitted sufficiently to leave hospital showed some sign of improvement before the completion of twelve treatments. Most of the exceptions were patients with katatonic excitement, in whom the first signs of progress were often delayed until 15 or 18 treatments had been given.

In spite of the increased capacity for rapport immediately after electro-narcosis, the kind of dramatic temporary improvement described by Kalinowsky and Hoch (1946) as common after insulin coma, did not occur, but nor did the gradual retrogression before the next treatment.

### Difficulties and Complications.

These were classified by Garmany and Early (1948) as follows:-

1. Severe cardiovascular shock.
2. Haemoptysis.
3. Clouding of consciousness.
4. Retention of memory of the treatment.

To discuss these points in order.

1. Cardiovascular shock occurred in one case, subsequently found to be suffering from very early pulmonary tuberculosis which had eluded discovery by physical examination. Her condition was not serious enough to cause alarm and recovery was complete in 48 hours.
2. No case of haemoptysis occurred.
3. A reactivation of the psychosis with excitement, hallucinosis and confusion occurred in 15% of cases prior to the introduction of thiopentone. In two cases this was followed by striking improvement which had not occurred before. In no case was the patient worse after such an episode than before. In all cases, the condition cleared up in periods varying from three days to three weeks. After the introduction of thiopentone, this sequel was rather less frequent, and no more serious in its effects.
4. Before the introduction of thiopentone, some memory of the initial shock was present in 15% of cases. Memory of a substantial part of the treatment occurred in 6%, but only in one case was there serious fear of a repetition of the experience. This patient was later given a full course satisfactorily with thiopentone. Since the introduction of thiopentone this



complication has almost ceased to exist.

The following difficulties were also encountered:-

1. Treatment was cut short in several cases owing to weak or irregular cardiac action during treatment. All were known to have cardiovascular abnormality before treatment was started. This difficulty was therefore due to the acceptance of greater risks with increasing experience.
2. A fracture of the right articular process of the eighth dorsal vertebra occurred in one man, and muscular injury in two, before the introduction of thiopentone. Since then no serious injuries have occurred.
3. Four cases showed sensitivity to thiopentone itself, emphasising the need for care and vigilance in its administration.
4. A large swelling of the thyroid gland of sudden onset and unknown causation occurred in one woman. It subsided in ten days without ill-effect.
5. Four patients refused further treatment as they felt apprehensive, even though they had been given thiopentone. Memory of the treatment did not appear to be present. All were hyperanxious types liable to become apprehensive of anything on flimsy grounds.
6. Small burns of the forehead occurred in several cases while the electrodes were new and their plating intact. When the plating wore off, the burns ceased. Removal of the plating on new electrodes prevented the occurrence of further burns.

## ANALYSIS OF RESULTS.

## 1). THE CONTROL SERIES.

Before starting electro-narcosis, a survey was made of all cases of schizophrenia admitted to Barming Heath Hospital during a ten year period before shock treatment for schizophrenia was used on a large scale. I had myself assessed many of these cases; the others had been evaluated by one or other of two psychiatrists whom I knew well. The personal factor was therefore indeed an equation in relation to the control series and the cases treated by electro-narcosis.

A small number of cases who received cardiazol, and a few late in the series who were given E.C.T., were eliminated. Patients transferred to other hospitals within a year of admission were excluded, as they passed out of personal observation. As the reason for transfer was place of residence, they presumably constituted a random sample, whose elimination had no statistical significance. If there were any, it was coloured by the fact that cases showing rapid improvement were not, as a rule, transferred. Those going to other hospitals were probably below average in prognostic prospects, so their elimination could only have had the effect of increasing slightly the improvement rate in the remainder. Patients who died within a year of admission were also excluded, to counterbalance the fact that patients in poor physical condition were

not lightly accepted for electro-narcosis. As the latter did not appear on the debit side of the electro-narcosis account, the former were removed from the debit side of the control series. All other patients regarded as schizophrenics were included in the control series.

The exact delimitation of the boundaries of the control group was a considerable problem. On the one hand, schizophrenic reactions and atypical affective disorders had to be eliminated; on the other, a demarcation line between paranoid schizophrenia and predominantly paranoid conditions had to be drawn. On the latter point, entire reliance had frankly to be placed on personal judgment to ensure that the line was drawn in the same place in controls and cases treated by electro-narcosis. It is true that, for example, affective failure, incongruous emotional responses, silly mannerisms, vagueness of thought content and impulsiveness were regarded as criteria of schizophrenia. Equally, resentment, clear definition of ideas and preservation of the personality were taken as indications of predominantly paranoid states. Nevertheless, different psychiatrists could clearly interpret these points quite differently. As regards schizophrenic reactions and atypical affective disorders, the continuity of personal viewpoint was the major factor, but a more objective criterion was also introduced. Any patient admitted to hospital three times in the ten year period, and achieving remission or social recovery on each



occasion, was eliminated from the control series.

The state of the control patients was assessed one year after admission. Consideration of the average length of stay in hospital, and the average time before readmission in relapsing cases, led to the belief that assessment at a later date might have given slightly more favourable results. The period of one year was chosen, however, as the regulations of the Board of Control about note-taking ensured detailed information for that period.

During the whole of the period in which electro-narcosis was carried out, there was a waiting list for admission to Barming Heath in the voluntary status. The psychiatric departments of general hospitals, neurosis hospitals and rehabilitation centres consequently treated a number of cases of good prognosis, who before the war would have come to Barming Heath. During the control period there was no waiting list at Barming Heath, and few alternative treatment centres were available. Therefore the proportion of cases of inherently good prognosis admitted during the control period was almost certainly higher than while electro-narcosis was being used.

The control series consisted of 557 patients, of whom 295 were men and 262 were women. 23 patients had two attacks within the ten year period, so the total number of "attacks" considered was 580. 137 of the patients had had other attacks before the start of the ten year period.

The patients in the control series received all the benefits of hospital treatment accorded to the electro-narcosis cases, with the single exception of electro-narcosis itself. According to their state 12 months after admission they were placed in the following five categories:-

1). Complete remission. This grade consisted of patients who had left hospital, and were free from psychotic symptoms at the time of departure. Insight was not demanded as a criterion for inclusion, as information on the point was not always available. This standard was therefore lower than the "Grade A" of Tietz et al (1946).

2). Social Recovery. This class consisted of patients who had left hospital, but showed residual symptoms at the time of their departure. These, however, were not sufficiently severe to prevent the patient from doing useful work, and adjusting to some degree to domestic life. Cases removed from hospital to be cared for at home were not included.

3). Improved. These patients were relieved from their symptoms to some extent, but not sufficiently for the hospital to initiate their discharge. Many of the patients taken home to be cared for came in this group.

4). Not Improved. This group included those who were unchanged, or worse than on admission.

5). Relapsed. This class consisted of patients who were readmitted after having achieved temporary remission or social recovery.

The important figures obtained were as follows:-

1). The results at one year of all attacks;

Category.	Number of patients.	Percentage.
1.	63.	10.9%.
2.	141.	24.3%.
3.	116.	20.0%.
4.	247.	42.6%.
5.	13.	2.2%.
	<hr/>	<hr/>
	580.	100.0%.

2). The results at one year, related to the duration of illness before treatment. In this classification, admission to hospital was regarded as the beginning of treatment. Patients were divided into six duration groups:-

1. Three months or less.
2. Over 3, but not more than 6 months.
3. Over 6, but not more than 12 months.
4. More than 1 year, but not more than 2 years.
5. More than 2 years, but not more than 3 years.
6. Over 3 years.

#### Duration Groups.

Category.	1.	2.	3.	4.	5.	6.
1.	46	7	6	4	0	0
2.	81	19	12	17	1	12
3.	37	10	20	16	9	24
4.	65	31	33	36	24	57
5.	8	2	1	0	1	1.
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
	237	69	72	73	35	94.



Expressed as percentages these figures read:-

Duration Groups.

Cat:	1.	2.	3.	4.	5.	6.
1.	19.4	10.2	8.3	5.5	0.0	0.0
2.	34.2	27.5	16.7	23.3	2.9	12.8
3.	15.6	14.5	27.8	21.9	25.6	25.5
4.	27.4	44.9	45.8	49.3	68.6	60.6.
5.	3.4	2.9	1.4	0.0	2.9	1.1.

3). Average stay in hospital:-

The average period spent in hospital by those patients who achieved categories 1 and 2 was 28 weeks.

4). Average duration before relapse:-

The average period between the dates of the first and second admissions in relapsing cases was 1 year and 11 months.

The rise in the social recovery rate in the group ill for more than 3 years was felt to require explanation. Most of the patients so classified had been ill for many years with few acute symptoms. They were tolerated by relatives until an untoward incident or unpleasant personal habits made admission necessary. As soon as the crisis was over, or improvement of any kind occurred, the relatives pressed for their discharge. As most went out to resume menial farm duties, they were given the benefit of the doubt and classified in Category 2.

## 2). RESULTS ACHIEVED WITH ELECTRO-NARCOSIS.

In the year starting on 29/1/48, the treatment of 105 schizophrenic patients with the help of electro-narcosis was completed. 21 other patients were considered to be schizophrenics and electro-narcosis was contemplated in their cases, but rapid spontaneous improvement occurred, so shock therapy was felt to be unjustifiable. Although not considered in detail, these patients had a bearing on the assessment of the results of electro-narcosis.

As many of the patients treated were cases of long-standing, with a very poor prognosis, a direct comparison of the over-all results in the electro-narcosis series, with the results at one year of all the control cases, was felt to be misleading. The control figures were therefore adjusted to allow for the duration of illness before treatment was instituted. In the case of patients treated by electro-narcosis, the duration of illness before treatment was reckoned up to the time that electro-narcosis was begun. This was considered to be fair, as any part of that period spent in hospital was passed in more favourable conditions than applied to the control cases, who were still at home.

The method of adjustment was as follows:-

The 105 treated patients were distributed as follows in duration groups;

Group 1.	2.	3.	4.	5.	6.
15.	11.	14.	21.	20.	24.

Taking group 1 first:

The expected results in 100 cases in group 1 were known to be as follows:-

Category 1.	2.	3.	4.	5.
19.4	34.2	15.6	27.4	3.4.

The results to be expected in 15 cases were therefore these figures multiplied by 15 and divided by 100, namely,

Category 1.	2.	3.	4.	5.
2.91	5.13	2.34	4.11	0.51.

After dealing with the other duration groups in the same way and adding the numbers falling in each category, the results were:-

Category 1.	2.	3.	4.	5.
6.34	19.03	23.66	54.06	1.86.
or 6	19	24	54	2,

if expressed to the nearest integer.

These figures indicated the expected distribution in categories of the 105 patients treated.

Expressed as percentages these figures became:-

Category 1.	2.	3.	4.	5.
5.7	18.1	22.8	51.5	1.9.

Of the patients treated, the numbers falling in the various categories were as follows:-

Category 1.	2.	3.	4.	5.
15	28	20	39	3
or 14.3	26.7	19.0	37.1	2.9 %.



For ease of comparison these figures can be tabulated together:-

Category.	1.	2.	3.	4.	5.
Controls.	5.7	18.1	22.8	51.5	1.9. %
Treated cases.	14.3	26.7	19.0	37.1	2.9. %

The expected discharge rate (Categories 1 and 2), calculated from the control group, was 23.8%.

The discharge rate actually achieved was 41.0%.

Of the patients discharged after electro-narcosis, 17, or 39.5%, had been ill for more than a year when treatment was started.

The average period from the start of electro-narcosis until discharge was 15 weeks.

In assessing these results, attention was paid to the 21 cases of schizophrenia, admitted during the year in which electro-narcosis was used, but not given shock therapy owing to the rapidity of their progress without it. Some doubt was felt as to whether 6 of the cases were strictly comparable to the control group, so the remaining 15 only were considered. It was felt that cases making rapid progress were present in the control series, but excluded from the electro-narcosis group. As these cases all left hospital, a factor raising the discharge rate in the control group, relative to the electro-narcosis group was felt to be present. It

was clearly impossible to assess how many patients in the control group improved too rapidly for hypothetical treatment by electro-narcosis, so an attempt was made to assess the importance of the issue by indirect means.

Supposing for the sake of argument that these 15 patients had been given electro-narcosis, and their remissions or social recoveries had been attributed to the treatment, what would the result have been? The total series would have consisted of 120 cases. The actual results achieved, and the expected results derived from the control series, expressed as percentages would have been as follows:-

Category.	1.	2.	3.	4.	5.
Controls.	7.5	19.2	22.5	49.2	1.6.
Treated cases.	19.1	29.2	16.7	32.5	2.5.

The ratio of actual results to controls in this hypothetical series was 48.3 : 26.7, or 180 to 100.

The ratio of actual results to controls in the real series of 105 cases was 41.0 : 23.8, or 172 to 100.

The results in the hypothetical series were better than those in the real series in the proportion of 180 : 172, or 104.5 : 100.

The fact that these 15 cases did not appear on the credit side of the electro-narcosis account had the effect of making the control series read approximately

41% too high in relation to the series treated by electro-narcosis. As it was no part of my programme to strain figures to the utmost to gain an effect, this fact was ignored in the final comparisons of control and treated cases.

In order to check the results more closely, assessments were made of the figures at earlier points in the series. At the time this survey was completed, 10 months had elapsed since electro-narcosis was finished in the first 43 cases; 6 months had passed since the end of electro-narcosis in the first 69 cases. Assessments were therefore made at these points.

The results in the first 43 cases were:-

Category.	1.	2.	3.	4.	5.
Controls.	4.7	16.2	23.3	53.5	2.3.
Treated cases.	18.6	20.9	11.7	46.5	2.3.

47% of those in categories 1 and 2 had been ill for more than one year.

The results in the first 69 cases were:-

Category.	1.	2.	3.	4.	5.
Controls.	5.8	17.4	23.2	52.2	1.4.
Treated cases.	17.4	24.6	17.4	37.7	2.9.

44.8% of those in categories 1 and 2 had been ill for more than one year.

The ratio between treated and control cases was therefore similar at three points in the series.

### 3). CLINICAL IMPRESSIONS.

In view of the aphorism of Hippocrates, cited by Garrison (1929), that "Science begets knowledge, opinion ignorance", it is with great diffidence that I record mere impressions. My low valuation of impressions was diminished even further when I discovered that Medlicott (1948) had drawn conclusions quite opposite to my own as the result of his experience. He considered that electro-narcosis was not superior to E.C.T. in schizophrenia, except in paranoid cases with a fairly well preserved personality. I was not impressed with the results in this group, but considered that other types did much better with electro-narcosis than with E.C.T. What follows is therefore extremely tentative, and may readily be reversed in the light of further experience.

The outstanding impression which I formed was that the affective component of the schizophrenic process was the one most obviously influenced by electro-narcosis. Very often the chief result of treatment was that patients became brisker, more alert, more interested in their environment and stronger in their emotional responses. They also showed an appearance of increased well-being; the clearing of the skins of women patients was particularly noticeable, even in some who did not improve mentally.

This general impression of the action of electro-narcosis tallied with the finding that a



number of cases of the simple type made a favourable response. As examples, I would draw attention to Case 5, (Category 1, No.1), Case 24, (Category 2, No.5), Case 48, (Category 2, No.10), Case 102, (Category 2, No.27), and Case 104, (Category 2, No.28).

In paranoid cases, I was more struck by the change in the emotional state of the patient than by any alteration in his thought disorder. In some cases it appeared that the pathological thought pattern was still actually or potentially present, but had lost its overwhelming emotional significance to the patient. In this connection I would quote Case 27, (Category 4, No.13) and Case 66, (Category 2, No.17). The former case is also an instance of a patient relapsing into paranoid ways of thinking while retaining a changed emotional tone.

To summarise, after electro-narcosis patients tended to become more responsive to their environment, while the emotional importance of subjective experience was lessened. An opportunity was therefore given, which required exploitation by occupational therapy and re-education.

As a result of this, the amount of danger and

difficulties in the adoption of technique therefore

includes experience with cases other than those

set out in the appendix.

## 2.1. TECHNIQUE.

Most psychiatrists who use shock treatment would

like to obtain equivalent benefits for their

## DISCUSSION.

## 1). GENERAL CONSIDERATIONS.

Throughout this work I have tried to deal with broad issues, and especially to avoid obscuring them with too much detail. The latter would become clinically irrelevant if electro-narcosis should prove to be of no value in psychiatry. That, however, is the main issue which I have striven to illuminate; whether, having regard to the technical hazards and the results achieved, electro-narcosis is a valuable addition to our weapons in the fight against schizophrenia.

In describing the technical problems of treatment by electro-narcosis, I have drawn on my experience with patients who were not schizophrenics. I agree with Tietz (1947), that difficulties are more frequently encountered in treating neurotics than with schizophrenics. I have also, perhaps by chance, found many difficulties in attempting to treat depressive patients who had not responded well to E.C.T. I therefore felt that an account of my experience with schizophrenics alone would not be altogether fair. The account of dangers and difficulties in the section on technique therefore includes experiences with cases other than those set out in the appendix.

## 2). TECHNIQUE.

Most psychiatrists who use shock treatments would like to obtain equivalent benefits for their

patients by gentler means. The work of Alpers and Hughes, (1942a, 1942b), Heilbrunn and Weil, (1942), and Ebaugh, Barnacle and Neuberger, (1943), referred to above in the Historical Survey, showed this to be desirable on scientific as well as humanitarian grounds. The evidence adduced by these workers pointed strongly to the convulsion and its concomitants being the cause of cerebral damage in E.C.T.. The work of Globus et al (1943), showed that the passage of current through the brains of dogs did not cause cerebral damage. On this basis it seemed clear that if convulsive phenomena could be eliminated from electro-therapy of the brain, without loss of therapeutic effect, an advance would have been achieved. To sustain a contrary view, it would be necessary to prove that cerebral damage is essential for therapeutic success, as with leucotomy.

The use of thiopentone anaesthesia in conjunction with electro-narcosis, eliminated convulsive phenomena in most cases, and reduced their intensity in all but a few. In the first 43 cases in this series, thiopentone was not used, and convulsive phenomena were, as a rule, prominent. Nearly all the remaining 62 cases were given thiopentone, with no significant diminution in the therapeutic results. In the treatment of schizophrenia, then, electro-narcosis is an advance towards the goal of "shock therapy without the shock".

However, have more demands made on them than in treatment by electro-narcosis.

Electro-narcosis was undertaken in the belief that it would require less time than insulin shock therapy. This point therefore requires consideration.

A treatment session for eight patients by electro-narcosis, using thiopentone, required 2 hours. As treatment was given every other day, two groups could be treated concurrently. The average number of treatments per patient was 16. Therefore, on average, 16 patients completed treatment in just over 5 weeks, without using sessions long enough to impinge on meal-times for staff or patients.

As regards insulin therapy, it is generally agreed that an 8 bed unit is as big as one doctor should manage single-handed. Two hours is the minimum time he should spend each morning in the unit. Allowing for the use on Saturdays of a half-dose of insulin, and allowing a mere week for achieving the first coma, 5 weeks work by one doctor would achieve at most 20 comas for each patient. This can hardly be regarded as an adequate average number. It is therefore fair to say that a doctor can treat more than twice as many patients by electro-narcosis in a given time, as he can by insulin shock.

As regards nursing, the situation is different. To consider the actual period of treatment first, an insulin ward for eight patients seldom requires the services of 5 nurses for a two hour period, covering the time while patients are in coma. Those present, however, have more demands made on them than in treatment by electro-narcosis.



A group of eight patients undergoing insulin shock require the nurses to be present every day, whereas with electro-narcosis they would only need to be present every other day for the same number of patients. Allowing that preparation and cleaning up afterwards require an equivalent amount of work with the two methods, the demands on the nursing staff are approximately equal as regards the treatment period itself.

Insulin therapy, however, requires nursing supervision to prevent after-shock passing unnoticed, as well as to ensure adequate exercise on the part of the patients. Also, close supervision is essential at night, and a special night nurse for the insulin patients as a group is very desirable. These arrangements are quite unnecessary with electro-narcosis, as the amount of supervision normally available is quite adequate, as no serious early after-effects have been reported so far.

The organisation of an electro-narcosis unit can be very flexible. At Barming Heath patients await treatment at one end of a day-room, the rest of which is in normal use. The gallery in which patients rest after treatment returns to its ordinary use when they get up. Only the treatment room is permanently reserved for its special purpose.

It is therefore possible to carry out electro-narcosis safely and efficiently in conditions which would make insulin therapy risky or anxious.

### 3). RESULTS.

Before using electro-narcosis, I had a fair experience of E.C.T. in the treatment of schizophrenia. I fully subscribed to the opinion of Hemphill and Walter (1941), who said "The original conception that convulsion therapy had its principal use in the treatment of schizophrenia is now abandoned". Henderson, Tod and Daly (1943) considered that fair results could be expected in schizophrenia with E.C.T., provided it was given in the earlier stages of the illness. My results were very disappointing, and I considered this opinion somewhat optimistic. I therefore started electro-narcosis knowing that I would quickly abandon it if it did not produce results far superior to those obtained by E.C.T. in schizophrenia.

The first 12 patients in this series were selected because they were physically robust, not on prognostic grounds. All had had E.C.T. without lasting benefit. Four achieved complete remission and one social recovery after electro-narcosis. Although one of the remitted cases later relapsed, this seemed a reasonably adequate demonstration of the superiority of electro-narcosis over E.C.T. in the treatment of schizophrenia. I felt that the time necessary to compare large numbers of cases treated by E.C.T. with a large series treated by electro-narcosis, could be better spent in other ways. I also felt that it was unjustifiable to



withhold electro-narcosis from schizophrenics in urgent need of treatment, in order to test their reaction to E.C.T.

The results claimed by Tietz et al(1946) have been described above in full. Tietz (1947) claimed that 14 out of 18 schizophrenics treated by electro-narcosis made a Grade A recovery. Milligan (1948) claimed that of 60 adult and adolescent schizophrenics treated by electro-narcosis, 52% achieved complete remission, and 20% were regarded as social recoveries. The proportion of Category 1 and 2 patients to the total number treated in the present series was by no means of the same order.

It is difficult to discuss the discrepancy as regards the American patients treated by Dr Tietz, except to say that she and her collaborators stated in 1946 that the patients were early schizophrenics with predominantly paranoid symptomatology. The prognosis was presumably intrinsically good, so her results cannot profitably be compared with those at Barming Heath. Dr Milligan, of St James' Hospital Portsmouth, courteously allowed me to study his technique, and discussed the whole subject with me at length. St James' Hospital is less than half the size of Barming Heath, but has a yearly intake of nearly twice as many patients. Certified and Temporary patients are taken only from the City of Portsmouth, but many voluntary patients are admitted from the surrounding districts of Hampshire. The Medway Towns of Rochester, Chatham and Gillingham form an



urban area very similar to Portsmouth, but represent only a small part of the region from which Barming Heath draws patients of all categories. Rural Kent presents it with many of its most intractable problems. It is clear, then, that St James' Hospital, Portsmouth, admits a much higher proportion of cases with a good prognosis. Moreover, it is the practice there to start physical therapy soon after admission, whereas at Barming Heath I very rarely started electro-narcosis before the patient had been in a month, and then only for urgent reasons. As has already been stated, 15 patients were allowed to remit spontaneously as their initial progress was so rapid. Even so, when all these factors have been considered, I have so far been unable to emulate Dr Milligan in achieving 60% of complete remissions in patients who were ill for between two and five years when electro-narcosis was begun. Without a control series, however, comparisons are probably misleading, as it may be contended that the vital ratio is that between results after treatment and the results in the control cases.

The difficulties involved in comparing a series of treated cases with a control group are least formidable when dealing with a condition in which the aetiological factors are known and susceptible to objective demonstration and measurement, especially if the relationship between aetiological factors and clinical manifestations is well understood.



The difficulties are therefore great in psychiatry, where aetiological factors are complex, and often obscurely related to clinical manifestations. Even in psychiatry, a more formidable problem than that presented by schizophrenia could hardly be found, owing to the extreme complexity and obscurity of the aetiology, and the protean nature of the clinical picture.

Petrie and Sands (1948) discussed the difficulty of assessing the results of shock treatment in depressive cases. In doing so, these authorities threw light on fundamental principles equally applicable to the problem of schizophrenia. They cited Penrose (1946) as having satisfied himself by statistical enquiry that electrical convulsive therapy held no advantage over less violent procedures, when a long range was taken, with a minimum of five years since treatment as a standard. They went on to say that although they hesitated to question the purely statistical validity of the finding, they felt it necessary to point out that there was little agreement between this view and the results seen day by day in hospital wards. They thus focussed attention on two approaches to the assessment of results. These may broadly be called clinical and statistical respectively; Petrie and Sands lent the weight of their authority to reliance on the former when the occasion appeared to demand it, in spite of the contrary finding derived from statistics.

In attempting the hazard of comparing two groups of schizophrenics, it seemed to me that a consideration

of fundamental principles underlying the clinical and statistical approaches might be illuminating.

It seems that the fruitfulness of the statistical approach is approximately proportional to the accuracy of knowledge of aetiological factors, and their susceptibility to exact measurement. In other words, comparisons are easy when these conditions apply, precisely because they are readily susceptible to statistical evaluation. On the face of it, then, the statistical approach is at a heavy disadvantage in psychiatry.

Elaborating this point further, it appears that this disadvantage arises because the findings of psychiatry are not objectively demonstrable facts so often as they are clinical observations, and the inferences from those observations denoted by the term clinical judgments. In order to apply statistics at all, it is necessary to give these judgments numerical values by using, for example, rating scales or comparisons of traits believed to be significant in relation to the particular enquiry being undertaken.

This basic limitation of the statistical approach requires to be constantly in mind if error is to be avoided. Broadly speaking, a given series of clinical observations and judgments must not be allowed to carry too heavy a superstructure of statistics, the weight allowable being itself a matter for judgment. Accuracy can best be maintained by constant reference back to the foundation of clinical observation and

judgment. If this is not done, the statistics may take leave of reality and lead to erroneous conclusions which are all the more dangerous as they appear to the uncritical to be based on mathematical certitudes.

The relation between the clinical and statistical approaches may perhaps be likened to a "Mariage de convenance", with each partner longing to be free from the limitations imposed by the other, but unable to realise such desires for reasons affecting the well-being of the union as a whole.

With these considerations in mind while assessing the results of electro-narcosis, I followed the lead of Petrie and Sands in giving pride of place to clinical observation and judgment, but also attempted to use statistics to give precision to clinical findings where possible. In so doing, I gave weight to the following considerations. A psychiatrist is frequently required to contemplate disorders affecting the entire personality, of which schizophrenia is a good example. Human personality is notoriously, (and in my view mercifully) elusive in face of attempts at statistical evaluation. I accept the tacit assumption underlying the clinical approach, that in questions affecting the total personality, clinical understanding and judgment go nearer the root of the matter than statistics. Further, in assessing treated and control groups of schizophrenics, it is generally held that ideally both groups should consist of equal proportions of



patients of similar intrinsic prognostic outlook. It may be argued that this can be achieved by comparing the attributes believed to be of prognostic significance displayed by the patients in the two groups. Such a method, however, must be used with caution, because it is inherently incapable of giving true value to a point of fundamental importance. In any given case, the estimation of prognosis is a complex act of clinical judgment which defies complete analysis. Reliance may be placed on the commonly accepted criteria of prognostic import, but the assessment of these factors requires a separate act of judgment for each case, in which the experience and clinical acumen of the psychiatrist are all-important.

In assessing the results of electro-narcosis, these considerations were given effect by the following procedure. Careful scrutiny ensured that all cases in the control and treated groups should fall within the same clinical descriptive limits. Steps were taken to ensure that the cases chosen for electro-narcosis were not predominantly of good inherent prognosis. All schizophrenics admitted during the time electro-narcosis was in use were treated, except those who were physically unfit and those who made substantial progress during their first month in hospital. In addition, a number of patients previously admitted, but making no progress with ordinary hospital care, were treated.



Special attention was given to the question of the duration of illness before treatment, because it was found to be important in relation to prognosis and because it was relatively easily susceptible to objective measurement. The importance of early treatment was stressed by other workers, particularly in relation to insulin shock treatment. Muller (1937) claimed 73.8% of recoveries in patients who had been ill for less than 6 months, 63.3% in cases who had been ill for less than a year, 37.8% in those treated before the end of two years, and 15.4% in those of more than 2 years' duration. Ross and Malzberg (1939) claimed a recovery rate of 26.1% in cases who had been ill for less than a month. This fell to 2.1% in those with a duration of 11 to 14 years. Sargent and Slater (1948) strongly emphasised the importance of the duration of illness in choosing cases likely to respond to insulin therapy. It was therefore interesting, in surveying my control group, to discover the importance of the duration of illness before admission to hospital in relation to the outcome of the illness. This was in line with the findings of others, and was valuable indirect testimony to the usefulness of hospital treatment in schizophrenia, quite apart from shock therapy.

In view of these findings, the percentages of control and electro-narcosis cases falling into the six duration groups described in the section on "Analysis of Results" were compared.

The figures were as follows:-

Duration Group.	1.	2.	3.	4.	5.	6.
Controls.	40.9	11.9	12.5	12.5	6.0	16.2.
Electro-narcosis cases.	14.4	10.5	13.3	20.0	19.0	22.8.

This comparison made it clear that as regards duration of illness before treatment, the electro-narcosis group was much less favourable than the control group. Nevertheless, an over-all comparison of the results in control and electro-narcosis cases showed a greater proportion of discharges in the latter, the actual figures being respectively 35.2% and 41%.

This improvement of 5.8% in the discharge rate was not felt to represent truly the improvement in results obtained by electro-narcosis, as the treated cases were predominantly of much longer duration. As this factor lent itself easily to measurement and mathematical manipulation, this was done in the manner described in the section on "Analysis of Results", leading to comparison of treated and control groups of similar duration of illness.

As regards other factors related to prognosis, detailed evaluation was felt to be as likely to lead to error as to illumination. The method of selecting cases, the diminution in the intake of good prognosis cases and the exclusion of patients making rapid progress in hospital were held to be factors ensuring that the treated series was not intrinsically of better prognosis than the control group. A perusal of

the appended case-reports will show that the selected cases for electro-narcosis were not, in general, particularly favourable prognostically. The fact that 39.5% of those discharged had been ill for more than a year showed that electro-narcosis did not merely pick out the few promising cases from a generally unpromising series.

The method of adjustment of control cases to match the duration of illness in control and treated groups, received confirmation when the 15 untreated cases were added to the series of 105 treated cases. In a direct comparison of the over-all results in both series, such an addition would have improved the treated series by 14% in relation to the controls. As the 15 cases were almost all of short duration, the adjusted result showed an increase of only  $4\frac{1}{2}\%$  over the controls. The fact that so heavy and unfair a load was so largely absorbed was indirect evidence of the substantial fairness of the method used.

To summarise, any method of comparing groups of cases of uncertain aetiology and protean clinical manifestations is open to objection. When the disorder in question affects the total personality, comparison is made doubly difficult. I therefore do not claim mathematical accuracy, but I submit that the method of comparison used is substantially fair, and that the short-term results of electro-narcosis show a ratio of discharges in treated cases to discharges in the control series of the order of 5 : 3.



Although this thesis deals with the problem of the treatment of schizophrenia in conditions which preclude adequate use of insulin shock therapy, it is clear that some attempt must be made to assess the relative merits of the two methods, in order to gain some idea of the value of electro-narcosis. The best way to do this would be to treat equivalent groups by each method in similar conditions. As the inadequate facilities for insulin therapy was the main reason for undertaking electro-narcosis, this could not be done at Barming Heath.

The most comprehensive recent study of the results of insulin therapy was in the New York State Hospitals' Report (1944), cited by Sargent and Slater (1948). A series of treated cases was compared with a series of untreated cases of similar type and prognosis. Of the treated cases, 80% were discharged, while of the untreated cases 59% were discharged, making the ratio between discharges in the two groups approximately 4 : 3.

As the figures for the present series represent short-term results, I do not wish to strain comparison with the long-term New York figures too far. The difference in the actual discharge rates is a further reason for caution. Relapses in the cases treated by electro-narcosis will undoubtedly occur. As the average period between admissions in relapsing cases in the control series at Barming Heath was 1 year



and 11 months, with a wide scatter about that mean interval, a 5 year study at least will be required to estimate the long term value of electro-narcosis. The short-term results, however, bear comparison with the results of insulin shock therapy.

The amount of time required before discharge in control and treated cases requires discussion. The figure of 28 weeks for control cases related to those leaving hospital within a year. The average stay in hospital for the electro-narcosis cases was reckoned from the beginning of the treatment. Allowing four weeks for preliminary investigation and evaluation, the time required was 19 weeks, a saving of two months per patient as compared with the controls.

In conclusion, I should like to make it clear that I am not suggesting that electro-narcosis is a rival to insulin shock therapy, still less that electro-narcosis is likely to supersede insulin. I submit, however, that on the evidence presented, a preliminary case has been made out to show that where insulin shock is not available, electro-narcosis is an equally safe alternative. Whether it is as good as insulin shock is still an open question, but I submit that electro-narcosis is better than either E.C.T. or hospital care alone, and may yet prove to be in the same class as insulin.

The shortage of medical staff in mental hospitals

is serious and likely to continue for some time. Until it is made good, it is unlikely that insulin therapy will be available for all schizophrenics coming under observation. As electro-narcosis requires so much less time than insulin therapy, it could be provided on a considerable scale without diminishing the resources available for insulin. I submit that if this were done, considerable numbers of schizophrenics would receive more efficient treatment than would otherwise be possible. I suggest, also, that a full investigation of the long-term results of electro-narcosis is both justifiable and desirable. Such an enquiry might throw light on the kinds of case especially suitable for treatment by each method, as well as demonstrating the long-term results of electro-narcosis in relation to those of insulin shock.

I submit, therefore, that in present conditions electro-narcosis has a useful place in the treatment of schizophrenia, and that the results of a long-term enquiry may be awaited with scientific detachment.

#### 4). THE PLACE OF SHOCK THERAPY IN PSYCHIATRY.

Although the use of shock treatments has won increasing acceptance by psychiatrists, it would be idle to ignore the controversies about their employment.

Winnicott (1945-6), referring principally to leucotomy but including all forms of shock therapy, said, "A new habeas corpus is needed now, a 'habeas cerebrum', and very quickly. The new physical therapy of mental disorders is sociologically dangerous, and surgical interference with the brain in mental disorders is absolutely never justified".

Atkin (1946) stated that in his view, many of the accepted reasons for adopting physical means of treatment were in the nature of rationalisations. The real motives were, he indicated, primitive and rather discreditable. Freeman and Watts (1947) gave an entertaining account of this dispute, citing authors on both sides.

History, with its cooling vistas of the centuries, transforms one's view of contemporary quarrels. In the account given by Garrison (1929) of the medical schools of Cos and Cnidos in the time of Hippocrates, one may discern similar differences of opinion, presumably arising from similar clashes of temperament to those visible today. To the Coan the patient was the real thing, and treatment centred upon assisting the patient to react, in his own peculiar individual way, against the disease. The Cnidian school, on the other hand, concentrated on the disease rather than

the patient, aimed at exact diagnosis and classification and attempted to employ specific therapy.

A good case can be made out for acclaiming Asclepiades of Bithynia (124 B.C.) as the Father of modern psychiatry. According to Garrison(1929) he was the first pioneer in the humane treatment of mental disorders. He discarded the antique practice of keeping mental sufferers in the dark. For treatment, he employed occupational therapy, exercises in promoting memory and fixing attention, and music and wine to promote sleep. The conflict outlined above can perhaps be discerned at work in his mind. He was a formal opponent of the Hippocratic idea and the Coan school and founded his therapeutic scheme on the efficacy of systematic interference. Nevertheless, in practice he relied on Coan methods in the treatment of mental disorders.

The modern concept of psychobiology, propounded by Adolf Meyer, is sufficiently comprehensive to engage the interest of modern Coans and Cnidians. It is clearly beyond the scope of this thesis to develop the subject of psychobiology, but reference may be made to two of Meyer's publications (1907, 1915). According to Richards (1946), Meyer advocated a study of all the factors in each individual case that would link up accurately with structural pathology, toxic processes, the historical development of the personality, environmental situations of strain, constitutional defects and so on, distributing causal



causal responsibility as the facts indicated. Only through such a study of all the dynamic factors associated with the patient's situation could the physician arrive at an understanding of his total reaction, or reaction-type.

Garrison (1929) cited an aphorism of Allbutt, "It is steadily forgotten that health is a diathesis as much as is scrofula or syphilis, and that each of these is a mode of growth". From the truth contained in these words it is a short step to think of the 'cure' of mental disorders in psychobiological terms. If, then, the facts indicate that shock treatment is one of the dynamic factors leading to a new and more satisfactory total reaction on the part of the patient, one must follow where the facts lead. This discussion may fittingly be ended by a quotation from Adolf Meyer, cited by Richards (1946):-

"The psychobiologic approach to psychiatry says, 'Render unto endocrinology, libido, foci of infection, heredity, organic pathology, constitutional make-up, personality investigation, environment, and any specific shock, stress or strain, the causal homage which facts in these spheres indicate in every patient; but do not approach behaviour disorders with a viewpoint so biassed by any credo, to which your scientific life is dedicated, that you bend all efforts towards making every patient fit the procrustes bed of some one pet theory'".

## SUMMARY.

1. An account is given of the administration of 2443 treatments by electro-narcosis to 152 patients, with special reference to the treatment of 105 cases of schizophrenia.
2. The history of the development of the method known as electro-narcosis is described. The description refers to the pioneer efforts of Ledue to introduce electrical anaesthesia, and deals with the experimental work on animals, in which Van Harreveld was the principal investigator. Work done on the types of current which may be used, and on the effects of electro-narcosis on cerebral metabolism and blood pressure, is summarised. An account is also given of investigations into the incidence and possible causation of cerebral damage following the passage of an electrical current through the brain.
3. The claims of other workers in the clinical field are set out; the lack of controls is commented on and the divergent developments in technique noted.
4. An account is given of the technique used to induce electro-narcosis, with special reference to refinements such as thiopentone premedication and movement of the electrodes.
5. The difficulties and dangers encountered are described, together with the methods of overcoming them.
6. A description of the survey of 557 cases of schizophrenia admitted to hospital during 10 years prior to the introduction of shock therapy is given, for

purposes of control.

7. The results achieved after the use of electro-narcosis are set out and compared with the control group in a manner which contrasts groups of cases of similar duration of illness before treatment.

8. The value of advances in technique which diminish convulsive phenomena is discussed, and the importance of using thiopentone is stressed in this connection. The use of thiopentone is shown to have no adverse effect on therapeutic results.

9. It is argued that a doctor can treat at least twice as many patients by electro-narcosis as by insulin shock, in a given time. It is shown that the organisation of the treatment unit can be very flexible.

10. The difficulties involved in comparing two groups of schizophrenics are discussed, and the reasons for the method chosen are given. While the main emphasis is placed on clinical appraisal, the use of statistics in regard to measurable factors is defended, especially in regard to the duration of illness before treatment.

11. The electro-narcosis group is shown to be of intrinsically worse prognosis than the control group, as regards duration of illness before treatment. Yet the percentage of discharges after electro-narcosis is 41% as opposed to 35.2% in the control group.

12. Comparison of groups of similar duration of illness shows that the ratio of discharges after electro-narcosis to discharges in the control group

is approximately 5 : 3.

13. The Report of the New York State Hospitals' Commission (1944) is cited to show that the ratio of discharges in cases treated by insulin shock to discharges in a control series is 4 : 3.

14. Caution is suggested in comparing these results, especially as the former are short-term, while the latter are long-term. Emphasis is placed on the unwisdom of regarding electro-narcosis as a rival or possible successor to insulin shock treatment, but it is submitted that it has a useful place in the treatment of schizophrenia, especially where there is a shortage of medical staff.

15. The case histories of the 105 patients treated by electro-narcosis are appended in a reasonably abbreviated form.

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80: 121, 141, 155.

3). Temperament. She was always quiet and reserved,  
making friends with difficulty.



Category 1. No 1.

Case 5. Female. Admitted 28.8.47. Age 17.

AETIOLOGY AND PSYCHOPATHOLOGY.

1). Family History. The paternal grandmother had a mental breakdown before the patient's father was born, but no details were available. She later recovered, but of recent years she was peculiar in manner and thought people were talking about her. The patient's mother was a hyperanxious woman, with a fear of enclosed spaces. She admitted that she continually feared accidents happening to her children. No other instances of mental disorder were elicited.

2). Early History and Development. It is clear that the mother fussed stupidly over the patient and three other siblings, and treated them as children far too long. For instance, when the patient was sixteen, the mother still helped her to dress. She was a poor scholar but could read and write a little. She was not ineducable or certifiably mentally deficient and would probably have done much better in healthier home circumstances. After leaving school she had a daily domestic job in a quiet household; her service was satisfactory for a period of two years. Some years ago her parents separated; shortly before her admission to hospital she went to stay with her father, and seemed brighter and more lively for a short time.

3). Temperament. She was always quiet and reserved, making friends with difficulty.

4). Sexual Life. Menstruation began at 14 and was regular and painless. She went out frequently with different boys, causing her mother much apprehension about her morals. No evidence of impropriety was elicited. About a year before admission she was attacked by a man, but not assaulted sexually.

5). Summary of Causative Factors. Constitutional predisposition could be inferred, but the environmental influences favouring mental disorder appeared stronger. The ultimate break-up of the home and her low intelligence were also relevant factors. The fact that she went out with boys added weight to a clinical impression that she had potentialities which had been given no chance to develop.

CLINICAL MANIFESTATIONS. She was admitted as a voluntary patient on 28.8.47, with a history of increasing apathy during the preceding two years. She had performed her work after a fashion until three weeks before admission, but spent most of her time endlessly brushing her clothes. Her work terminated when she refused to go out, as she said everyone was talking about her. For many months, however, she had refused to cross the road on her own or to travel in buses, and had shown a strong desire to be left alone in the dark whenever possible. One year before admission she was abnormally excited for a short time following a visit to the seaside.

On admission she was morbidly preoccupied, indif-

ferent to her environment and incapable of useful work. She showed severe thinning of affect and loss of energy. She spent most of her time lost in fantasy and complained of taunting voices saying she was a "Good-for-nothing". She admitted she was afraid to go out as people watched her in the street. She showed a mild degree of depersonalisation and considerable derealisation.

Between 15.9.47. and 3.10.47. she was given nine electrically induced convulsions, without benefit. She made no spontaneous progress, except that she worked in a desultory fashion in the occupation department, with much supervision.

DIAGNOSIS. Neither mental deficiency nor adolescent sensitivity could be invoked to account for her affective failure, hallucinations and thought disorder. Physical and serological examination excluded organic disease. The depressive component of an affective psychosis was the only alternative to schizophrenia requiring serious consideration, particularly on account of the ideas of unworthiness and the history of phase of excitement. Her emotional state, however, was one of apathy and indifference, not depression. She showed no retardation, only perplexity and blocking of thought. The previous personality was schizoid and the slow insidious onset was characteristic of schizophrenia. As emotional failure and loss of energy were the outstanding features of her case, she was regarded as a schizophrenic of the simple type.

TREATMENT. She had a course of twelve treatments by electro-narcosis, three times a week, starting on 29.1.48., with atropin pre-medication only. The electrodes were placed temporally and the average coma-dose was 115 M/A. No unusual or untoward phenomena were noted.

RESULT. Shortly after her last treatment she had a phase of excitement and confusion lasting forty-eight hours. When that was over it became clear that her interest in her surroundings was much greater than before treatment. Her hallucinations, depersonalisation and derealisation cleared up. She was sociable in the ward, talked to other patients freely, and went to physical culture classes and dances with every appearance of enjoyment. She worked usefully in the ward; in the occupation centre she made dolls' clothes with little urging or supervision. On 15.3.48, nine weeks after her treatment was begun, she left hospital, as her improvement was well maintained. She showed no psychotic symptoms and realised that, whereas she had been ill, she was then well. Her illness was regarded as having undergone a complete remission.

DURATION OF ILLNESS. With a straightforward history of two years deterioration before admission, this was computed at two years and six months at the time treatment was started.



CASE 7. Male. Admitted 30.9.47. Age 24.

AETIOLOGY AND PSYCHOPATHOLOGY.

1). Family History. The patient was an American seaman, who was landed from his ship in the Thames Estuary and later certified. In due course a letter was received from his mother in a middle western State giving a few details of some value. She wrote in a peculiarly detached way, but gave the impression of being an intelligent and observant woman. The patient's father died in 1941. The maternal grandmother suffered from recurrent attacks of mental illness, and a maternal uncle and aunt were described as "nervous". The patient's mother had a depressive attack shortly after her husband died; she was at the menopause, and there was further stress due to the death of a son about the same time. The remaining members of the family were a married sister of thirty, and a brother of twenty-seven, both alive and well.

2). Early History and Development. His childhood was normal and he was an average scholar. He joined the U.S. Navy, and served in the South Pacific in the early stages of the Pacific War. In 1948 he had a breakdown; when he recovered he went back to sea in an American merchant ship.

3). Temperament. Little information was available, so a Roischach test was done after he had electro-narcosis. From this, the tentative conclusion was reached that he was a simple fellow of rather below average intelligence,

with some loss of touch with the ordinary aspects and problems of life. He appeared somewhat pre-occupied with immature fantasy and rather deficient in the power of adapting himself to changing circumstance..

4). Sexual Life. No details were available.

5). Summary of Causative Factors. There was clearly a strong hereditary constitutional element, and the family environment was probably not helpful. There may have been stress on the occasion of his first breakdown, but no exagenic factor could be incriminated for the second one.

CLINICAL MANIFESTATIONS. No details could be obtained about his first illness, except that he recovered in about six months. The patient himself said that he was given insulin treatment in an American Military hospital.

On the second occasion he began behaving strangely as his ship approached Britain. He was restrained temporarily and put ashore as quickly as possible. When admitted to Barming Heath Hospital he was semi-stuporose. He lay in bed, indifferent to his environment, grinning and grimacing constantly. He only occasionally answered questions in laconic monosyllables, usually irrelevant. He was faulty in habits and totally dependent on nursing care for feeding and every other attention. Soon after admission he had his first phase of violent excitement, in which he was extremely impulsive and destroyed all his bedding. The alternation of

phase continued with occasional fairly lucid periods between the extremes. He then showed no clouding of consciousness, and no defect of memory except for the acutely excited phases of his illness. After a fortnight he showed some improvement, but considerable thinning of affect was present, and he was not sociable. He was not capable of useful work. Between 28.11.47 and 5.12.47 he had a course of five electrically induced convulsions. For a week or two afterwards he was brighter and more controlled, but then relapsed into his former state. He showed no further improvement before electro-narcosis was begun.

DIAGNOSIS. Clinical and serological investigations revealed nothing significant. Organic delirium was ruled out by the absence of clouding of consciousness or memory defect. He was not elated or accelerated, so mania was excluded. The picture was characteristically schizophrenic. The alternation between stupor and excitement was typical of the katatonic variety.

TREATMENT. He was given twelve treatments by electro-narcosis, three times weekly, starting on 30.1.48. The electrodes were placed temporally and the average coma dose was 110 MA. He received atropin premedication only. He retained some memory of the initial shock on several occasions, but was not deterred from continuing the treatment. No other difficulties were encountered.

RESULT. He improved steadily as treatment progressed,

and when it was over the swing between the opposing phases had ceased. He was much more interested in his environment, was mixing with other patients and was usefully occupied. His manner was much more normal and his power of affective response greatly improved. He continued to make good progress and on 1.4.48, eight weeks after electro-narcosis was begun, he was able to leave hospital. He then showed no psychotic symptoms and his illness was regarded as having undergone complete remission. Four months after leaving hospital a letter was received from America about him. At that time he was still in good health.

DURATION OF ILLNESS. He had been ill for four months when electro-narcosis was begun.



Category 1. No 3.

CASE 11. Male. Admitted 18.10.47. Age 30.

AETIOLOGY AND PSYCHOPATHOLOGY.

1) Family History. The maternal grandfather indulged in periodic drinking bouts, in which he was often violent. His wife eventually obtained a legal separation. His mother was described as "nervy and hysterical"; she had a breakdown in 1935. She was in an institution whose name was never divulged. Although she was not certified, her husband thought she could have been. The patient had one sister alive and well, but another, an epileptic, died at the age of fourteen in a fit.

2) Early History and Development. As his parents lived in another part of the country, accurate details were hard to get. Nothing in his early years struck them as significantly abnormal. He was an average scholar and eventually became a sanitary inspector. He first broke down at the age of seventeen, and was in a mental hospital as a voluntary patient for eight months. No details were forwarded from this hospital, but a secondhand hearsay account stated that he lost his voice for several weeks. When war broke out he registered as a conscientious objector but was not granted exemption by the tribunal. He was, however, rejected on medical grounds owing to his earlier breakdown.

3) Temperament. Shy, seclusive and unsociable tendencies were noted at an early age, but as he grew older he also showed generosity and kindness.

He had periods of being over-conscientious, and straining too hard both at work and play. As a rule, however, he was given to acting on impulse, and reacting with resentment if thwarted in any way. He was abstemious in habits, particularly as regards drink.

4) Sexual Life. He married in 1942, and had a daughter aged 4. He was described as a good husband and father.

5) Summary of Causative Factors. The family history indicated a strong constitutional element. No doubt, also, his mother's abnormality reacted unfavourably on his early development. His resentment of authority and registration as a conscientious objector indicated a man at variance with society in attitude and outlook. No history of a precipitating factor could be obtained, but this may not be significant. He was cajoled into visiting Kent when it became clear that he would have to be certified, purely in order that this "disgraceful event" should take place in an area far removed from his parental home and his place of work.

CLINICAL MANIFESTATIONS. In June 1947 he went for a holiday in the Lake District with two male friends. He was in poor physical condition when he set off, and returned in a state of collapse. He entered a mental hospital as a voluntary patient on June 21st and left against advice on 25.9.47. He was vividly

hallucinated, erratic in conduct and expressed persecutory delusions. He was regarded as suffering from a schizophrenic episode. On going home his conduct was wildly erratic. He impulsively attacked his wife on several occasions and threatened to kill her. On more than one occasion he went out into the street with his clothes on back to front, and then knocked on the doors of strangers' houses.

After admission to Barming Heath he was restless, impulsive and destructive to crockery. He had to be nursed in a single room and kept under close observation, as otherwise he blocked the lavatories with newspaper, or strewed coal over the floor and played with it. He was at times negativistic and resistive to necessary attention. His speech was inconsequent and disconnected, but sufficiently coherent for him to explain that influences from the wireless loudspeaker came from a distance and forced him to turn his head, or perform similar actions. He said he heard voices telling him to go home and join his wife.

Between 3.11.47. and 19.11.47. he had a course of eight electrically induced convulsions, with considerable benefit. His delusional ideas were less in evidence, and he appeared to have lost his hallucinations. On 28.11.47. he relapsed quickly to his former condition; he had a further course of seven convulsive treatments, without effect on his mental state, which remained unchanged until

electro-narcosis was started on 30.1.48.

DIAGNOSIS. Clinical and serological examinations revealed nothing significant. The main alternatives to schizophrenia was recurrent mania, and an organic delirium precipitated by exhaustion. The first was eliminated as he was not elated or accelerated; he showed little lability and no distractibility. His thought processes were incoherent and bizarre, and his silly antics were persisted with until he was restrained. The second was eliminated as he showed no increased receptiveness to impressions, augmented suggestibility or tendencies to embroider and confabulate. His thought disorder occurred in a setting of clear consciousness. He did not conform to any of the four recognised sub-types, but in view of the history of a previous episode and the domination of the clinical picture by excitement, he was regarded as suffering from katatonic excitement.

TREATMENT. On 30.1.48. he started a course of twelve treatments by electro-narcosis, given three times a week. The only pre-medication was atropin gr. <sup>1</sup>/<sub>100</sub> subcutaneously half an hour before treatment. The electrodes were placed temporally and the average coma dose was 130 mA. Five of his treatments were recorded as being restless, and he said that the start of each one felt like being "hit by a bomb". Strangely enough, he showed no disinclination for further treatment.



RESULT. During treatment he made steady progress. He became more alert and normal in manner; his hallucinations faded and his thought disorder cleared. Seven days after his course was finished, however, he became restless and over-active. He showed clouding of consciousness and was vividly hallucinated. This state did not completely clear for three weeks; towards the end of this time he said he spent his time "talking to himself inside". By the end of March 1948 he was becoming much more sociable and wanted to work. He said that he imagined his bed was "heated and electrified" but knew that it was "only imagination". Following this episode his progress was steady and uninterrupted. He left hospital on 1.7.48. twenty-one weeks after treatment was started. He was then free from psychotic symptoms and was alert, sociable and actively employed. His illness was considered to have undergone complete remission.

DURATION OF ILLNESS. About the only item of information clearly given by his relatives indicated that he broke down rather suddenly, eight months before electro-narcosis was started.

Category 1. No 4.

Case 21. Male. Admitted 30.1.48. Age 19.

AETIOLOGY AND PSYCHOPATHOLOGY.

1. Family History. The patient's father died when the patient was about 4 or 5. His mother, who was a foolish indulgent woman, remarried. In addition to the patient there were two girls by the first marriage, one of whom had a "nervous" breakdown in August 1947. There was one girl or 11 by the second marriage, described as a "holy terror" who had to be bribed to go to school. The step-father had several children by a previous marriage, all normal and healthy.
2. Early History and Development. His infancy was normal. When his father died, however, he was admitted to an orphanage for a time, until his mother remarried. The boy was again away from home owing to evacuation from 1939 till 1944. He then was apprenticed as a plasterer, and continued at that work until his illness.
3. Temperament. He was quiet and a poor mixer. He used to go out occasionally with one or two special friends, but ordinarily spent his evenings at home and went to bed early. He was always very particular about his appearance, and fastidious as regards dress.
4. Sexual Life. He never showed any interest in girls and was inclined to be shy in their company.
5. Summary of Causative Factors. The history suggested that early environmental factors were mainly to blame. The broken home and his mother's influence were both unfortunate. During early adolescence,

when he should have been making social contacts, he was again away from home, so there was nobody interested in helping him to overcome the defects of his personality. No precipitating factor could be discovered.

CLINICAL MANIFESTATIONS. He became moody, distraught and dissatisfied with his job about the middle of December 1947. He was reprimanded several times by his employer for slackness, but did not improve as a result. After the Christmas holiday he was unable to go back to work. He sat in the house all day, picking at his fingers and staring vacantly out of the window. He felt that he couldn't "join in" with others socially. He said he was not afraid of meeting others, but there appeared to be a barrier between him and them, so that he was quite apathetic and unable to take any interest in anyone. He was admitted to Barming Heath Hospital on 30.1.48, as a voluntary patient.

He showed profound apathy and affective thinning. He showed no interest in his environment and was careless of his appearance. His speech was somewhat disjointed, but he was able to give quite a good account of himself, even regarding his subjective state. He spent his time in rather painful and profitless rumination on his physical sensations, and his feelings of apathy and inertia. Thought blocking occurred frequently, and occasioned some bewilderment. There was no definite evidence of hallucinations or delusions, but he was quite inactive socially and incapable of useful work.

He showed no spontaneous improvement before being given electro-narcosis.

DIAGNOSIS. Clinical and serological examinations revealed nothing abnormal. There was neither clouding of consciousness nor memory defect to suggest an organic delirium. At no time did he show a depressive emotional tone and there was no depressive mental content. His slow cerebration was due to blocking of thought, not retardation. By exclusion, therefore, a diagnosis of schizophrenia was made, with his schizoid previous personality as a confirmatory point. In the absence of any pathological content he was regarded as being of the simple type.

TREATMENT. He was given 12 treatments by electro-narcosis, three times weekly, starting on 27.2.48. He was given atropin premedication only. The electrodes were placed temporally and the average coma dose was 110 MA. On one occasion he retained a memory of the initial shock, saying it felt like being hit on the head. He was not apprehensive on subsequent occasions. No other difficulties were encountered.

RESULT. During his course of treatment he improved slowly and steadily. When it was over he was much more active and interested in his surroundings. His capacity for emotional response was much stronger, and his manner much easier and more positive. He was making social advances and his work was quite useful. During the next few weeks his thought blocking disappeared, and



his powers of concentration and persistence at work improved. On 7.5.48, ten weeks after electro-narcosis was started, he left hospital. His illness was considered to have undergone complete remission.

DURATION OF ILLNESS. He had been ill for approximately  $2\frac{1}{2}$  months when electronarcosis was begun.

2) Early History and Development. His early history was uneventful. He was bright at school and was first in the top class when he left at fourteen. He then worked for a small firm of electrical engineers and gave good service until his breakdown.

3) Temperament. He was described as a cheerful, sporty, easy-going youngster with a number of friends. He was an active boy and often helped a neighbour on Saturdays by going with him on a green-grocery round. He went to the pictures about once a week, and regularly went to see "all-in" wrestling every Saturday night.

4) Sexual Life. He was known to have made several dates with girls, but had had no serious affairs. He was not shy or awkward in female company.

5) Summary of Cognitive Factors. Nothing significant was ever discovered.

CLINICAL MANIFESTATIONS. In 20th December 1947 he complained of pain in the stomach. This was thought to be a hangover from Christmas, when he had got drunk. He was sent to the doctor and received some advice about diet. After this he would not go out with his friends and behaved in a rather excited and foolish

CASE 22. Male. Admitted 5.1.48. Age 17.

AETIOLOGY AND PSYCHOPATHOLOGY.

1) Family History. The patient's father was a bus-driver, a decent kindly man. His mother was quiet and stable. He had two elder brothers doing well in the services and a younger sister in clerical work. There was no history of mental or nervous disorder.

2) Early History and Development. His early history was uneventful. He was bright at school and was first in the top class when he left at fourteen. He then worked for a small firm of electrical engineers and gave good service until his breakdown.

3) Temperament. He was described as a cheerful, happy-go-lucky youngster with a number of friends. He was an active boy and often helped a neighbour on Saturdays by going with him on a greengrocery round. He went to the pictures about once a week, and regularly went to see "all-in" wrestling every Saturday night.

4) Sexual Life. He was known to have made several dates with girls, but had had no serious affairs. He was not shy or awkward in female company.

5) Summary of Causative Factors. Nothing significant was ever discovered.

CLINICAL MANIFESTATIONS. On 29th December 1947 he complained of pain in the stomach. This was thought to be a hangover from Christmas, when he had too much to drink. He was sent to the doctor and received common-sense advice about diet. After this he would not go out with his friends and behaved in a rather excited and foolish

way. Next day, however, he went to work. He was doing a job in a house on his own. He took a wallet out of a chest of drawers and was seen counting the money in it. He then laughed and pranced about in an oafish way and put the wallet back where it belonged. Later in the day he left work early without permission, and said that he had seen his father, his uncle and "all the spivs" at the house where he worked that day. He then became restless and disjointed in speech and from then on either his father or brother stayed with him until he was admitted to hospital. He wandered about in an excited state; on several occasions he banged his head hard against the wall, and once attacked his father, who was hard put to it to control him. When this had been going on for three days the family capitulated and arranged his admission to Barming Heath Hospital.

After admission he varied rapidly between a state of stupor and one of frenzied excitement. In the former he was mute, resistive to every approach or attention and intensely negativistic. In the latter he showed continuous, violent impulsive overactivity; he was intensely aggressive and very destructive. In the course of a few days he settled down somewhat. He then grinned and grimaced to himself and often adopted grotesque poses for considerable periods. His speech was disconnected and inconsequent to the point of being gibberish at times. He admitted being hallucinated and tried to elaborate their content as follows:- "Pipes echo here, O.K. from A to Z, twenty-six and illusions". When he became amenable to

more detailed examination he showed no serious clouding of consciousness. He was correctly oriented and showed a fair amount of memory even for the acute period of his illness.

For approximately four weeks after admission he made some spontaneous progress, but then sharply reverted to the state he was in on admission. His grotesque mannerisms were even more pronounced, his speech became mere verbigeration and his behaviour wildly impulsive and aggressive. Electro-narcosis was therefore undertaken.

DIAGNOSIS. Physical and serological examinations revealed nothing significant. The alternatives to schizophrenia were acute mania and delirium due to organic factors such as toxæmia or exhaustion. Mania was excluded because he was not elated or accelerated and did not show responsiveness to his environment such as distractibility. The exclusion of delirium was more difficult, although the picture on admission was more characteristic of schizophrenia. However, when he became accessible to testing there was no evidence of clouding of consciousness or of memory defect. He did not show increased responsiveness to impressions, nor did he confabulate. The alteration of excitement with resistive stupor in a schizophrenic setting led to the diagnosis of schizophrenia of the katatonic type.

TREATMENT. He was given twelve treatments by electro-narcosis, three times weekly, starting on 30.1.48. The electrodes were placed temporally and the average dose



dose required was 80 mA. He received atropin pre-medication only. He showed great sensitivity to electricity and during one treatment displayed Cheyne-Stokes respiration which became more regular when the current level was lowered. Otherwise no difficulties were encountered.

RESULT. He improved steadily during his course of treatment and by the end showed greatly improved interest in his surroundings. His phases of stupor and excitement became less intense and then disappeared. His manner was more normal, he attended dances and social functions and was capable of useful work. He continued to respond well to measures of rehabilitation. His hallucinations and thought disorder cleared up and his speech became connected and rational. His capacity for emotional reaction improved and his conduct became stable and controlled. He left hospital on 6.5.48, ten weeks after electro-narcosis was started. He was free from psychotic symptoms, so his illness was considered to have undergone complete remission.

DURATION OF ILLNESS. He had been ill for one month when electro-narcosis was started.

Category 1. No 6.

CASE 34. Female. Admitted 27.12.47. Age 25.

AETIOLOGY AND PSYCHOPATHOLOGY.

1). Family History. The patient's father was a simple and barely literate man; her mother was his second wife. She was said to be a fussy, managing woman, but she succeeded in winning the affection of her step-children, of whom there were three. She herself had two children. The patient was the only member of either family to suffer from mental illness.

2). Early History and Development. She was a placid baby and her upbringing was uneventful. She did well at school and then trained as a typist and telephonist. Her employers thought well of her, and she only gave up work to get married.

3) Temperament. She was always reserved and slow to make friends but had one or two intimates. She tended to bottle up her emotions, and hated any public display of feeling. In her superficial relationships she struck people as "happy-go-lucky"; she got on quite well with the neighbours, was fond of dancing and often went to the pictures. She bought things rather freely for the house, but was not actually extravagant.

4) Sexual Life. In 1941, when she was nineteen, she married a man whom she had known for two years. As he was in the R.A.F. she continued to live with her parents until his demobilisation in 1945. He was an open-handed, expansive man with many irons in the fire, who worked as manager of a fish-and-chips business, but also kept rabbits and chickens on a considerable scale.

He was a consistent and fairly successful devotee of the

turf, and won a considerable local reputation as a pigeon-fancier, often being asked to judge at shows. While he was in the R.A.F. he was said to have paid too much attention to another woman when he was stationed a long way from home. This was quite probable, but no real estrangement resulted. There were two children of the marriage, a boy and a girl, who were respectively three and a half years and seven months old at the end of 1947. The husband was a normally affectionate father, though somewhat erratic and indulgent in his attitude to the boy. He said that his wife never wanted the son and kept wishing the boy had been a girl. When she had a daughter, however, she showed even less interest in her than in the boy. The patient's father was very antagonistic to his son-in-law and wrote a letter accusing him of being a "sex-maniac" and of stealing goods from his own father. Careful enquiry from a number of informants failed to substantiate these charges; it seemed clear that the husband was a rather wild and extravagant young man with no real vice in him.

5) Summary of Causative Factors. Although there was no overt history of mental disorder in the family, the father was clearly a simple and unbalanced man, and the mother little better. There was probably a constitutional element predisposing to breakdown and the patient certainly showed schizoid traits from an early age. These she apparently managed to conceal behind a superficial happy-go-lucky manner. It is a reasonable speculation that her husband, with the lack of discrimination of the complete extravert, mistook her for another of his own

kidney. His discovery of his mistake may well have been the start of the marital discord which undoubtedly acted as a powerful precipitating factor. Breaking point was reached after her second confinement.

CLINICAL MANIFESTATIONS. The patient's husband first complained of her being "queer" in 1943. Nothing serious occurred for a long time after that, but the patient's odd attitude to her children was probably the outcome of a slowly progressive schizophrenic process. Clear evidence of mental instability was seen after the birth of her second child. From that time until her admission to hospital, the facts had to be disentangled from a series of confused and contradictory accounts, biassed by the unfounded accusations of the patient's father, and distorted by delusional statements by the patient. When all was sifted out, it transpired that the patient had become suspicious, secretive and resentful. She refused to see her relatives, but if they insisted on visiting, she talked in a rambling way, and suggested aimless and futile activities by way of entertaining them. There is no doubt that she gave away some of her furniture to a club, of which she was a member. Her husband, however, almost certainly allowed it to be believed that she had given away more than she had, while he himself, pawned several pieces in order to pay racing debts. The patient accused her neighbours of spying on her, and mimicking her in the street. She progressively neglected herself and the children, and finally did no housework and would not cook.



When admitted to Barming Heath Hospital on 27.12.47. she was stiff and affected in manner; she punctuated her conversation with a silly little laugh and often screwed her face up in a peculiar way. She showed severe affective thinning, but her residual response was mainly of suspicion and resentment. She said that she was constantly tormented by television from "bare wires"; she pointed to wires on the outside wall for supporting climbing plants, and said they were the ones being used. She said she could hear the voices of her persecutors, who were a gang of people living in "pre-fabs". She said they were jealous of people who, like herself, were living in "real houses", and were using foul methods to get the house dwellers out, so that the "pre-fab" gang could take their place. She blamed her husband for making things easy for the gang by his "loose conduct", which investigation showed to be non-existent, at any rate at that particular time. There was no significant change in her mental state before electro-narcosis was given.

DIAGNOSIS. Physical and serological investigations showed nothing significant. The diagnosis was not seriously in doubt once the facts were known; in any case the clinical picture was typically schizophrenic when she was admitted to hospital. The only alternative to be considered was a toxic-infective-exhaustive syndrome following confinement. Duration alone made this unlikely, and she showed no clouding of consciousness, defect of memory or demonstrable diminution of mental

grasp. Failure of affect and the presence of mannerisms indicated schizophrenia of the paranoid type rather than a predominantly paranoid state.

TREATMENT. She was given twelve treatments by electro-narcosis, three times weekly, starting on 6.4.48. The electrodes were placed frontally and the average coma-dose was 140 mA. No difficulties were encountered.

RESULT. When her course of treatment was finished she showed more interest in her environment, and increased emotional power. Her stiff and peculiar manner remained and she was extremely polite and well-mannered towards the staff. Her delusions had cleared up entirely and she was no longer hallucinated. When discussing her husband and relatives, however, she became intensely annoyed and shouted abuse like any back-street Cockney. This was regarded as a healthier state of affairs than her former excessive emotional continence. During the months following treatment a prolonged, involved and rather squalid family row developed, which resulted in delaying the patient's discharge from hospital. A separation from her husband was eventually agreed on, and she left hospital thirty weeks after electro-narcosis was begun. She showed complete remission of her schizophrenic symptoms.

DURATION OF ILLNESS. Reckoning from her second confinement, this was ten months at the time electro-narcosis was started.

CASE 35. Female. Admitted 22.11.47. Age 23.

AETIOLOGY AND PSYCHOPATHOLOGY.

1) Family History. Her father, aged 69, was a retired paper-mill worker of Lancashire background and Welsh ancestry. He was a small man, upright physically and morally, independent in attitude, rigid in principles and intensely dogmatic. Her mother died of cardiac failure following influenza, when the patient was ten years old, and the father married again eighteen months later. The picture given of the first wife was of a vain, ineffective woman who was always in a muddle, whereas the second was capable and prided herself on never losing her head. The patient never confided in the step-mother, whose pride was considerably hurt in consequence.

The patient had four brothers and two sisters living, but was the youngest by ten years. The father did not get on with the rest of the family, who resented his second marriage. Light was shed on the family background by two incidents. When the patient was admitted to hospital, two married brothers who had shown no interest in her for years made a sudden outcry about the stigma of certification and blamed their stepmother for the whole affair. Also, as the patient attacked her step-mother before admission, the father said he would never have the patient in his house again; he later relented.

There was no known history of mental or

nervous disorder.

2) Early history and development. She was described as a reserved, obstinate child, with a hot temper, but no tendency to sulk or bear grudges. She was an average scholar. After school, she held three resident domestic posts for four years, eighteen months and two years respectively. The third of these was as waitress at Buckingham Palace. She lost her first job for staying out late and failing to rise in the morning.

3) Temperament. From an early age she was obstinate, reserved about her personal affairs and very sensitive to criticism. She enjoyed being the centre of attention and responded readily to flattery. She was vain and fussy about her personal appearance and spent all her money on clothes and amusements. She had a voracious appetite for cheap love-stories and film magazines. An older colleague on the Palace staff said the patient struck her as being like a spoiled only child. Although the patient was supposed to be fond of dancing and male company, this colleague thought she did not go out enough, and would end up as an old maid. The temperament thus showed well-marked schizoid and hysterical traits.

4) Sexual Life. The account obtained from her father and stepmother described a girl who had been fond of going out with boys from an early age, giving anxiety by coming in late and staying in bed in the mornings. She was said to have a



passion for dancing. Her friends at work said she spent her off-duty indoors, and often remained in bed on her Sundays off. Her main recreations were the cinema, magazines and staring into the fire. She therefore seems to have stayed out at night in order to get away from home rather than from any positive enjoyment of masculine society. Shortly before her admission to hospital she is thought to have had a disappointment in love, but it is clear that the man never paid her serious attentions.

5) Summary of Causative Factors. Although no hereditary element could be traced, schizoid traits were clearly deeply embedded in the structure of her personality. The family situation during adolescence was clearly important. Her father apparently indulged her, while her stepmother clearly regarded it as important to win her confidence. It is probably significant that she broke down shortly after a disappointment in love, and two days before the wedding of Princess Elizabeth. She remained aloof from the general excitement during the preparations for the wedding, and gave the impression that she could not bear anyone else, even a princess, being the centre of so much romantic interest.

CLINICAL MANIFESTATIONS. At Christmas 1946 she was noticed to be absent-minded and forgetful. She spent her time sitting about and smoking; she was often seen grinning foolishly to herself. Before her holiday was over, she became annoyed

because her stepmother criticised her for staying in her bath for nearly an hour. She packed her bags and left the house. She never divulged where she spent the rest of her holiday, but she reported for duty at the right time. She became increasingly aloof and preoccupied and made a habit of having two very long baths every day.

Two days before the Royal Wedding, she turned up at home in Gravesend in uniform, although she was supposed to be on duty. She said she had spent several hours "looking at the sea". She said she wanted to die, and to take her stepmother with her. After being put to bed she became violent and clutched her stepmother by the throat. After a struggle the stepmother escaped into the street, pursued by the patient, who was caught and restrained by neighbours.

When admitted to hospital on 22.11.47. she was morbidly preoccupied and indifferent to her environment. She often grinned and grimaced to herself, or spent long periods staring raptly into space. She showed great thinning of affect and was indifferent to her appearance as well as her situation. She said she could hear voices talking to her and that she knew everything that her friends were saying in London. Her thought content was vague and idiosyncratic with a paranoid colouring. She said that she had been "fixed" and it was too late to do anything about it. She was unsociable and incapable of useful work.

She showed little change during the weeks which passed before electro-narcosis was started, except that her over scrupulous care for her appearance returned and she spent much time admiring herself.

DIAGNOSIS. The absence of organic elements was established by physical and serological examinations. Depression was ruled out by the absence of any serious affective involvement and the lack of ideas of unworthiness or other depressive content. Her talk of suicide was in the nature of a silly demonstration and no serious attempt was made. The clinical picture was characteristically schizophrenic. The pre-occupation with hallucinations, silly laughter and mannerisms, mild impulsiveness and regression to a negative state, all suggested the hebephrenic subtype.

TREATMENT. She started electronarcosis on 6.4.48. and finished on 13.4.48. after four treatments. She had atropin and sodium amytal gr.6 as pre-medication. The electrodes were placed frontally and the average coma-dose was 135 mA. No unusual or untoward phenomena were noted.

RESULT. Her response to treatment was sudden and dramatic. She became brisk and interested in her environment. Her schizoid mannerisms, hallucinations and vague ideas of reference cleared up. She showed improved emotional power and control. She started to work and her power of sustaining

attention and effort rapidly improved. She attended dances and other entertainments, and mixed well with others in the ward. She remained free from psychotic symptoms until her discharge on 7.5.48. five weeks after treatment was begun. Her illness was regarded as having undergone a complete remission.

DURATION OF ILLNESS. There was a clear history of one year and three months duration before the start of electro-narcosis.

#### Early History and Development.

He had a bad attack of bronchitis when he was 15 months old, and from the age of eight suffered from asthma. He did quite well at school, however, and reached the top standard in spite of much absence. At fourteen he became a page-boy, but gave this up owing to his asthma. His quarrelling with his father was a failure for the time being, as his chest was irritated by colds. He then had various unskilled jobs, was rejected for the service, and finally when 23 years old, got and held a job in a factory making electric light bulbs.

#### Temperament.

He was a shy boy, but hard-working, conscientious and ambitious. He made few friends, and never went about in "gangs". He had few social activities, although for a time his sister took him to dances and tried to encourage him. When he should have gone to evening classes to learn electrical engineering, he wouldn't go, and did the work at home.



Case 38. Male. Admitted 5.2.48. Age 24.

AETIOLOGY AND PSYCHOPATHOLOGY.

1. Family History. The patient came of a working class family. The father was a kindly man, gentle and fond of the patient. The mother was a decent, level-headed woman. There was a family of five, of whom the patient was the second; the others others were all cheerful and normal. A maternal aunt was in a mental hospital for two years in 1934. After going home she remained "excitable".

2. Early History and Development. He had a bad attack of bronchitis when he was 15 months old, and from the age of eight suffered from asthma. He did quite well at school, however, and reached the top standard in spite of much absence. At fourteen he became a page-boy, but gave this up owing to his asthma. Market gardening with his father was a failure for the same reason, as his chest was irritated by pollen. He then had various unskilled jobs, was rejected for the services, and finally when 20 years old, got and held a job in a factory making electric light bulbs.

3. Temperament. He was a shy boy, but hard-working, conscientious and ambitious. He made few friends, and never went about in "gangs". He had few social activities, although for a time his sister took him to dances and tried to encourage him. When he should have gone to evening classes to learn electrical engineering, he wouldn't go, and did the work at home.

4. Sexual Life. He has never made friends with girls, and was rather shy and awkward in their company, in spite of the kind offices of his sister. For two years before his admission to hospital he nourished a dumb and distant, but consuming love for a girl in the factory where he worked. She was a pretty creature who sang in a dance band and had had an audition from the B.B.C. The patient's sister described her as "a nice girl with ambitions". Shortly before his admission to hospital, the patient plucked up the courage to ask her for a date, and was firmly and finally turned down.

5. Summary of Causative Factors. A hereditary constitutional element was possible present. He certainly showed schizoid traits from an early age, and was severely handicapped by his asthma. His unrequited love was probably the final precipitating factor.

CLINICAL MANIFESTATIONS. According to his parents he was unduly quiet and showing signs of "strain" for two years before being admitted to hospital. The start of his illness, however, could most conveniently be dated from June, 1947. He was then off work for eight weeks in a dejected state. He moped about the house, smoothing his hair with his hands, looking in mirrors and watching his own shadow on the wall. Even after he went back to work he was silent and rather irritable. He came straight home from work, slumped in a chair, and only moved to eat his meals. After failing to make a date with the girl of his affections, he complained of

feeling dazed and unable to concentrate on his work. He then got up one night and dressed, saying he was going to marry the girl who had turned him down. He said he had been told this by wireless, as he was able to get information on any subject through the soles of his feet.

He accepted advice to enter Barming Heath Hospital as a voluntary patient, on 14.11.47. He was indifferent to his environment and morbidly preoccupied with hallucinatory experience. He showed gross thinning of affect and was inconsequent and disjointed in speech. He explained at length how he received "direct messages" from a voice, which told him he was to be married. He was given two E.C.T. treatments on 3.12.47 and 5.12.47. This had to be cut short owing to an exacerbation of his asthma, probably coincidentally. He was brighter for a few days, and began to show some interest in occupation. Slight progress continued until January 1948, when he smashed a board for wall quoits. He said the rings on the board had a bad influence on him, and made his asthma worse. He rapidly lost all the headway he had made and took his departure from hospital, only to be admitted again a few days later under certificate. While at home he had thrown various objects belonging to other members of the family in the dust-bin. He said they had been deliberately strewn about the house to emanate influences harmful to him, because the whole family had turned against him. Once back in hospital he announced he was a robot, as his mind was completely controlled by

a psychic power manipulated by one of the doctors. He showed no change mentally before being given Electro-narcosis. In view of the history of asthma, an electrocardiogram and radiogram of the chest were obtained, and the agreement of a cardiologist secured, before treatment was started.

DIAGNOSIS. Clinical and Serological investigations revealed nothing significant. The picture was characteristic of schizophrenia, though some debate on the sub-type was possible. As time passed, ideas of reference and passivity tended to persist and the preoccupation with hallucinations faded. He was therefore considered to be of the paranoid type. As a matter of form the possibility of a depressive psychosis was considered but neither the emotional state, nor the mental content were in any way typical.

TREATMENT. He was given twelve treatments by electro-narcosis, three times weekly, starting on 7.4.48. He received sodium amytal and atropin premedication. The electrodes were placed frontally and the average coma-dose was 125 MA. No difficulties were encountered.

RESULT. He improved steadily during the course of his treatment. When it was over he was much brisker and capable of greater emotional response. His manner was more normal, his bizarre ideas were no longer in evidence, and he was not hallucinated. He was beginning to mix with others socially and was working usefully in the



occupational therapy department.

In the ensuing weeks he continued to co-operate with the process of rehabilitation. He left hospital on 3.6.48., eight weeks after the start of electro-narcosis, free from psychotic symptoms. His illness was regarded as having undergone a complete remission.

DURATION OF ILLNESS. He had been ill for ten months when electro-narcosis was begun.

Case 50. Male. Admitted 21.4.48. Age 22.

AETIOLOGY AND PSYCHOPATHOLOGY.

1). Family History. There was no family history of nervous or mental disorder. The father was a painter, a quiet, hard-working man and a teetotaler; the mother was a pleasant, sensible woman, devoted to her family. The patient was the only boy; he had two elder sisters and one younger, all healthy and cheerful. The family as a whole were very respectable and staunch churchgoers. The general appearance of the house was a cut above the neighbourhood.

2). Early History and Development. Birth and infancy were normal. He won a scholarship from elementary school to the County School, where he passed his matriculation. His strong subjects were English and modern languages. At sixteen he went into the Audit department of the Kent County Council and remained there until called up at the age of eighteen. After a period of infantry training he was transferred to the Pay Corps, owing to defective eyesight in one eye. He went abroad to Cairo, was promoted to sergeant, and was said to have refused a commission. He was awarded the Commander-in-Chief's commendation certificate. When he was discharged from the Army in November 1947, he found his old job rather trying, as he was virtually an office boy again. He was given the opportunity, therefore, of transferring to the Accounts department.

3). Temperament. He was quiet, thoughtful and conscientious, keen to get on and ready to work hard. He was even-tempered and got on well with other boys at school, and with colleagues in the office and in the Army. He was a keen swimmer.

4). Sexual Life. He never had any particular girl friend, and was very shy in feminine company.

5). Summary of Causative Factors. For all his good qualities he gave an impression of emotional immaturity. As the only boy he was possibly spoiled, and had his way made smooth. His very conscientiousness suggested a compensatory drive and his shyness with girls revealed a definite personal limitation. Taking into account the fact that his father was a hard-working and religious man, it appeared plausible to visualise the patient as the victim of a rather tyrannous super-ego, happy in a situation defined by authoritarian discipline, but going to pieces when genuine individual initiative and adaptation were called for. The form of his breakdown suggested that he might have undertaken a sexual experiment while in the army, but even so his reaction to it required explanation. Regarding his case more superficially, the change in his fortunes at the end of the war was a considerable blow.

CLINICAL MANIFESTATIONS. At Christmas 1947 he was noticed to be unusually quiet. He said he had no interest in his work as he was not earning his salary. During ensuing weeks he said that the other men at work

kept looking at him in silent accusation. He would not go out, but sat about at home biting his nails. Then he expressed the idea that he had no blood in his veins; on the day before his admission to hospital he kept saying that he was dying and loudly demanded a blood transfusion.

In Hospital he was morbidly pre-occupied and showed little interest in his environment. He showed no sign of tension and discussed his case in a detached, unemotional way. He was not retarded, but heard voices, mainly of a rude and accusing kind. There was a bizarre quality about his thinking. He said that all the blood in his body had poured into his head, leaving the rest of his body bloodless, and that he had a twisted mind, due to living too much within himself.

About ten days after admission he showed a transitory spontaneous improvement, but he soon relapsed, and when given electro-narcosis was in the same state as on admission.

DIAGNOSIS. Clinical and serological investigations revealed nothing significant. The main problem was to differentiate between a depressive and a schizophrenic illness. The pre-psychotic personality and the ideas of guilt and inadequacy all suggested depression. His affective reaction, however was not depressive and there was no retardation. He discussed himself quite dispassionately, as though he were somebody else. His delusional ideas, moreover, had a bizarre schizophrenic



quality, especially in a boy of his education. His case was made the subject of a consultation, and agreement on the diagnosis was reached before electro-narcosis was prescribed.

TREATMENT. He was given twenty-seven treatments by electro-narcosis, three times weekly, starting on 14.5.48. For the first four treatments he received atropin and sodium amytal premedication. On subsequent occasions he was given thiopentone. The electrodes were placed frontally and the average coma-dose was 130 mA. No difficulties were encountered.

RESULT. He showed a steady improvement as treatment progressed. When it was over he was more alert and interested in his environment and had recovered his capacity for emotional response. He had lost his detached attitude and talked about himself with normal feeling. His hallucinations and thought disorder had cleared up. He was sociable and working usefully and showed fair insight into his illness. He left hospital on 23.7.48, ten weeks after electro-narcosis was begun. His illness was regarded as having remitted completely.

DURATION OF ILLNESS. This was five months at the time electro-narcosis was started.

CASE 55. Male. Admitted 20.2.48. Age 53.

AETIOLOGY AND PSYCHOPATHOLOGY.

1) Family History. His father and mother both lived to a ripe old age; the father was a police inspector, described as nervous and quick in his movements. There were four children, of whom the patient was the eldest. One brother was alive and well; one sister died when twenty in a mental hospital following a disappointment in love. The other sister entered a Church of England religious community when approaching middle age.

2) Early History and Development. His early development was normal; he did well at school and was good at figures. During the first World War he served in the Navy; he was an Officers' steward, and earned good testimonials. After demobilisation he did office work; this he enjoyed, but his firm went bankrupt. After a period of unemployment he became a bus conductor; at first he disliked the work intensely, but got used to it and was still in the same employment at the time of his breakdown.

3) Temperament. He was said to be cheerful, and "nervous and quick in his movements" like his father. He was extremely conscientious and a keen and active church member. When seen at the time of his breakdown, he gave the impression of an over-anxious personality, crossing his bridges well in advance and inclined to be too submissive and anxious to please.

4) Sexual Life. He married when twenty-three, shortly after leaving the Navy. His married life was happy until symptoms of mental illness developed, when he

became very irritable with his wife. He had one child born in 1921. She married in 1947 and was expecting her first child when the patient was admitted to hospital.

5) Summary of Causative Factors. There was apparently a familial constitutional predisposition to mental illness. The patient broke down during the involutional period but no obvious exagenic factors were present.

CLINICAL MANIFESTATIONS. In June 1947 he was first noticed to be irritable, and also thin and ill. He continued at work, however, until in October he complained of internal obstruction and hearing voices. He was seen at the psychiatric department of a well-known London teaching hospital, where a diagnosis of paranoid psychosis was made. He was asked to return for treatment, but failed to do so. Later in October he made a futile attempt to gas himself, after which he wandered about the streets from 3.0 a.m. till 6.0. a.m. He was admitted to the Observation Ward, but settled down very quickly. The grounds for certification were inadequate and he refused voluntary treatment in a mental hospital, so an attempt was made to keep an eye on him at the local psychiatric clinic. He was not co-operative, however, and returned to work. He complained of hearing voices and seeing faces at the windows, and fitted his house with extra thick curtains. He became increasingly moody, suspicious and bad-tempered, and called on the neighbours to protest against a campaign of gossip which he said was being directed against him.

The driver of his bus said he behaved as if he were mad, rushing about and gesticulating stupidly. Late in January 1948 he cut his wrist with a razor blade and, in view of his earlier reaction in the observation ward, was certified there and then.

In Barming Heath Hospital he showed himself detached, self-absorbed and indifferent to his environment. He was odd, stiff and stilted in manner, and showed severe thinning of affect. He said he could hear the voices of secret police agents discussing the possibility of charging him with some sexual crime. He said unknown people accused him of exposing himself indecently and of masturbating. He said they used to observe him in bed with his wife by means of television. He said he could still hear the voices of his pursuers in the hospital ward. He believed that his mind and behaviour could be influenced by others through psychic power. His speech was inconsequent and disconnected, and his thought content was vague and his ideas ill-defined. He had a course of eleven treatments by E.C.T. between 9.3.48 and 6.4.48. He showed no change as a result, and made no spontaneous progress before electronarcosis was begun on 14.5.48.

DIAGNOSIS. Physical and serological examination revealed nothing significant. Many features of his case suggested a depressive illness. First, there was the epoch in which he became ill. Then came the suicidal attempts, and finally his mental content was strongly suggestive of depression, with the emphasis



on guilt feelings associated with sex, and his idea of an impending criminal charge. Earlier, also, he had complained of "internal obstruction" for which no basis in fact existed. Nevertheless, when admitted to hospital he was not depressed but apathetic. Such emotional capacity as he showed was coloured by suspicion and resentment. Closer examination of his suicidal attempts showed them to be inefficient and hardly serious, while his delusions did not include any idea of his own guilt. He thought his pursuers beasts to accuse him of such things so blatantly falsely. The paranoid element in his case was obvious; the presence of affective thinning, strangeness of manner and a vague, ill-defined thought content led him to be regarded as a schizophrenic. His failure to respond to E.C.T. was held to be some confirmation of the diagnosis by making depression an improbable alternative.

TREATMENT. He was given six treatments by electro-narcosis, three times weekly, starting on 14.5.48. For the first two he received atropin and sodium amytal pre-medication only. The electrodes were placed frontally and the coma doses were 135 mA and 150 mA. On the second occasion treatment was terminated after five minutes as the patient was restless and the narcosis obviously light. He complained afterwards of having had a bad dream with a queer feeling in his head which he could not describe. On subsequent occasions he was given thiopentone; the electrodes were still placed

frontally and the average coma dose was 130 mA. No further difficulties were encountered.

RESULT. His improvement during treatment was rapid and dramatic, so much so that an early relapse was confidently expected. At the end of his course he was brighter, more alert and showing improved capacity for emotional response. His delusions and hallucinations had cleared up entirely. He was still rather odd in manner and vague in his thinking, but was taking part in social activities. He worked well in the occupation department and co-operated with measures taken for his rehabilitation. He left hospital on 1.7.48, seven weeks after electro-narcosis was begun. He was free from psychotic symptoms and showed fair insight into his condition. His illness was therefore considered to have undergone complete remission.

DURATION OF ILLNESS. He had been ill for eleven months when electronarcosis was started.

Case 60. Female. Admitted 10.6.48. Age 25.

AETIOLOGY AND PSYCHOPATHOLOGY.

1). Family History. There was no history of mental or nervous disorder. The father was a quiet, steady man, very fond of the patient; the mother came from Southern Ireland. There were three children, the other two being boys, one older and one younger than the patient. The elder boy was killed at Singapore; the younger suffered from tuberculosis and for a long time was nursed at home. From an early age he was the object of his sister's jealousy.

2). Early History and Development. She had an uneventful lower middle-class upbringing and was quite bright at school, particularly at exams. After elementary school she went to the local technical school, and became a really good shorthand typist. After various jobs she went to the War Office, and worked there until late in 1945. Then an officer, a married man, paid her unwelcome attentions. She felt she was being talked about in an unpleasant way by her colleagues. She attended the psychiatric department of a London teaching hospital and was advised to give up her job and join the Women's Land Army, which she did. Unfortunately no record could be obtained from the hospital concerned, so it remained uncertain whether the incident had any basis in fact. She did well, however, in the Land Army and thoroughly enjoyed the life. When her first two years' engagement finished, she rejoined and had been

in for two and a half years when her breakdown occurred.

3). Temperament. Her mother said she was "highly strung" and extremely sensitive from an early age. She could not bear being criticised. Her jealousy of her brother has been mentioned, but in general she was a kindly girl, inclined to think the best of people and to be too trusting. She was not seclusive, however, and got on quite well with other people in her district, and at work.

4). Sexual Life. She never showed any particular interest in masculine society, but was not shy or awkward in the company of men. She had no particular boyfriend.

5). Summary of Causative Factors. There were no obvious external precipitating factors, so the causes of her breakdown must be assumed to be endogenous. Her personality was certainly a vulnerable one. It may be significant that her progress towards illness was accelerated after being a bridesmaid to a friend.

CLINICAL MANIFESTATIONS. She showed slowly progressive mental deterioration from March 1947 onwards. She was home on compassionate leave to look after her mother, who was ill. She was abnormally quiet, and lacked her usual interest in life. She began, after that, to spend her time off work sitting about doing nothing, or reading psychology. By Easter 1948, when she acted as bridesmaid to a friend, the change was very noticeable, but soon became even more rapid. She lost interest



in her appearance and her work began to deteriorate. When she came home for the Whitsun holiday she was tearful, sleepless, and could not settle at home. She entered Barming Heath Hospital as a voluntary patient.

Dominating the clinical picture was failure of affect; she was lethargic, apathetic and indifferent to her appearance and situation. She was stiff and odd in manner, but made no attempt to communicate her thought content. She expressed various ill-defined hypochondriacal ideas, mainly about curious sensations in her head. Later she tried to express herself, and then the presence of severe thought-blocking became obvious, causing her considerable bewilderment and distress. There was, apparently, some sense of the unreality of her surroundings, but she was correctly oriented, and showed no defect of memory. Her condition showed no change before electro-narcosis was begun.

DIAGNOSIS. Important physical factors were excluded by clinical and serological investigation. Depression was ruled out because her affective reaction was failure, not distortion, and there was no depressive content in her illness. The possibility of a chronic anxiety state was considered, but rejected as she showed no genuine tension. There was no real sense of depersonalisation to support the diagnosis of a depersonalisation syndrome occurring in a neurotic setting. The only condition to fit the facts was schizophrenia, and the absence of content suggested the simple type.

TREATMENT. She was given nine treatments by electro-narcosis, three times a week, starting on 29.6.48. She received atropin and sodium amytal premedication. The electrodes were placed frontally and the average coma-dose was 130 mA. No difficulties were encountered.

RESULT. She improved slowly and steadily during her course of treatment. Shortly after it was finished she was brisker and more alert, and was interested in her appearance and environment. She was working well and participating in social activities. Her power of emotional response was greatly increased, and her stiff, odd manner had eased greatly. Her thought content was simple and rather vague, but there was no blocking and her hypochondriacal complaints had vanished. The patient quite spontaneously described how she felt better after her first treatment, and got a further "lift" from each subsequent one. She left hospital symptom free, four weeks after treatment was started. Her illness was regarded as having remitted completely.

DURATION OF ILLNESS. The history clearly indicates that she had been ill for one year and three months when electro-narcosis was started.

CASE 67. Male. Admitted 22.5.48. Age 40.

AETIOLOGY AND PSYCHOPATHOLOGY.

1) Family History. The father was an ineffective worrier, a farm labourer in the rural heart of Kent. The mother was a placid, kindly soul, but a semi-invalid owing to heart disease. There were seven children in the family; one girl was admitted to a mental hospital in 1944 and became a chronic schizophrenic; another died of thyrotoxicosis during the war.

2) Early History and Development. His infancy was uneventful. He was an average scholar and then became a farm worker. He did the work quite well, and there was no friction with his employer or his mates.

3) Temperament. He was a rather slow, placid individual, who did not impress details of his character upon anyone. Family friends apparently regarded him as "the normal one of the family".

4) Sexual Life. He married in December 1947, apparently very happily. He had one or two previous love affairs, which came to nothing without upsetting the patient very much. He gave the impression of being unduly dependent on his wife.

5) Summary of Causative Factors. A strong constitutional predisposition was presumably present. Shortly before marrying he had a breakdown, but improved when married. His second illness occurred after a threatened mis-carriage by his wife, for which the doctor prescribed rest and sexual abstinence. When he was breaking down he brooded over some long past love affair in



a nostalgic way. There was therefore some evidence to indicate that sexual tension was a precipitating factor.

CLINICAL MANIFESTATIONS. In July 1947 his conduct became strange and erratic for a time. He was suspicious towards all his friends and said he was being filmed. Nobody took much notice of this, and said he would be cured by marriage, which he was for a time. However, in April 1948 the threatened miscarriage occurred. The patient became worried and started to drink rather heavily. He kept harking back to an earlier love affair, and said wireless messages kept pouring into his brain. He kept talking to himself all the time and frequently repeated the Lord's prayer. As there was no sign of spontaneous improvement he was admitted to Barming Heath Hospital under certificate.

On examination he was indifferent to his environment. He was careless of his appearance and required supervision over his toilet. Often he wandered about in an aimless way. He showed serious thinning of affect and his speech was incoherent and disconnected. He showed incongruity between his emotional reactions and the current of spoken thought. He said he heard voices speaking to him all the time, usually giving him messages about Palestine. Ideas of influence and passivity were present; he was convinced his thoughts were both read and controlled by other people, who were able, as a result, to make him do what they wanted. He made no effort at social



activities and could not be usefully employed. He made no spontaneous progress before being given electro-narcosis.

DIAGNOSIS. Clinical and serological examinations revealed nothing significant. His emotional reactions and mental content were not depressive at any time, nor did he show clouding of consciousness or defect of memory. An affective psychosis and delirium of organic origin were therefore ruled out. The pre-occupation with hallucinations, incongruity of affect and general inertia indicated schizophrenia of the hebephrenic type.

TREATMENT. He was given sixteen treatments by electro-narcosis starting on 28.6.48. He received atropin and thiopentone premedication. The electrodes were placed frontally and the average coma-dose was 140 mA. On four occasions the narcosis was of inadequate depth, but no memory of the treatment was retained. On one occasion he stopped breathing and his pulse became irregular for a short time after the injection of thiopentone, but before the current was applied. Otherwise no difficulties were encountered.

RESULT. He improved slowly during his course of treatment. At the end he was much brisker and more alert. He was more interested in his surroundings, was usefully employed and showed some social initiative. He was not hallucinated, but retained his vague thought content and ideas of passivity. He co-operated well

with the progress of rehabilitation and proved quite a useful cricketer. He left hospital on 2.9.48, nine weeks after treatment by electro-narcosis was begun. By then his ideas of passivity had faded, his emotional capacity had recuperated and he showed partial insight. His illness was therefore considered to have undergone complete remission.

DURATION OF ILLNESS. He had been ill for two months when electro-narcosis was begun.

Category 1. No 13.

CASE 74. Female. Admitted 21/7/48. Age 39.

AETIOLOGY AND PSYCHOPATHOLOGY.

1). Family History. Her father and mother both lived to be nearly 80. They died almost at the same time, soon after being bombed out. There were 8 children in the family. All were alive and well, though one sister was said to have been "peculiar" for a time. There was no history of nervous or mental disorder.

2). Early history and Development. Few details were available, but the course of her early life was apparently smooth. She was an average scholar and was then in domestic service until she married at the age of 18.

3). Temperament. The information on this point was obtained from members of her family who had rather lost patience with her, as they could not grasp that many annoying features of her behaviour were due to mental illness. It seemed clear, however, that she was never very sociable and had few friends. She was also said to be inclined to "moan".

4). Sexual Life. She married young, and at the time of her admission to hospital had two grown up daughters at work. Relations with her husband were cool, but it was difficult to discover to what extent this was the result of her illness.

5). Summary of Causative Factors. She was probably a simple and rather schizoid person, with few contacts outside her home. When her daughters grew up there was little for her to do and she was very lonely. Her husband used to grouse at her because she would not go

out, and the general atmosphere of domestic strain was probably the final precipitating cause.

#### CLINICAL MANIFESTATIONS.

In the spring of 1945 she became convinced she was pregnant, and would not believe she was wrong even though she continued to menstruate. She continued to express this idea for more than a year. She became listless and lacking in energy, and progressively neglected her housework. She frequently said she had been chased by stags through the streets of her home town. She became definitely hostile in attitude to her family, and said her life was ruled by someone else who could read her thoughts and control her actions. The situation at home eventually became impossible, and she was admitted to Barming Heath Hospital on 21/7/48.

On examination she was self-absorbed and indifferent to her environment. She spent much time staring vacantly into space, and was roused with some difficulty. She required some supervision over her meals and toilet. Her affect was very thin, and incongruity between her emotional responses and the current of spoken thought was often noticed. She complained of voices which told her to do things which she did not want to do. As an example, she said she was often ordered to prepare coffee, when she really wanted to make tea. She also said that strange influences were working against her. She would start to prepare a meal with ample materials,



most of which vanished mysteriously in the course of cooking. She believed that her mind was read and all her actions controlled from outside herself. She made no effort to make social contacts, and was incapable of useful occupation. She made no spontaneous progress before electro-narcosis was begun.

DIAGNOSIS. Physical and serological examinations revealed nothing significant. Her residual emotional tone was of resentment and suspicion, not depression. Her mental content was not suggestive in any way of depression. The picture was, in fact, characteristic of schizophrenia. There was too much thinning of affect and oddity of manner, as well as detachment, for her to be regarded as a predominantly paranoid case.

#### TREATMENT.

She was given 31 treatments by electro-narcosis, 3 times weekly, starting on 19/8/48. She received pre-medication by atropin and thiopentone. For the first 17 treatments, the electrodes were placed frontally and the average coma-dose was 130 mA. On subsequent occasions the electrodes were placed frontally and moved temporally during the course of the treatment. The average coma-dose was then 115 mA. No difficulties were encountered.

#### RESULT.

At the end of her course of treatment she was rather less withdrawn. She was no longer hallucinated and

she repudiated her former ideas of passivity. She showed no insight, however, and still believed other people wished her harm. She was, however, beginning to make social contacts, and was willing to attend the occupational therapy department. A fortnight after electro-narcosis was over she was ready to admit that her paranoid ideas might have been "imagination". From that point onwards, she made steady progress, and was able to leave hospital on 22/1/49. She then said her former delusions were "All bosh". She had been in hospital for 22 weeks after electro-narcosis was begun. She was regarded as having achieved complete remission.

#### DURATION OF ILLNESS.

She had been ill for just over 3 years when electro-narcosis was begun.

Category 1. No 14.

CASE 86. Female. Admitted 30/10/48. Age 39.

AETIOLOGY AND PSYCHOPATHOLOGY.

1). Family History. The patient's father was addicted to drink and made life miserable for his family. The patient was deeply attached to her mother, who died of cancer early in 1948. The family was Welsh, of the upper working class, and there were five children in all. The others were alive and well, one being a trained nurse. There was no family history of mental disorder, apart from the father.

2). Early History and Development. Life at home was almost intolerable from the patient's very early years. Her father was cruel to his wife, and there was never any money as he spent it all on drink. He used to shout and rave at the family and beat them savagely for little reason. The patient vividly remembered the receipt of a letter at the end of the first World War, saying that her father was coming home. The whole family was terrified, and everyone burst into tears. The patient was, however, quite bright at school. When she left she had various domestic jobs, and then, rather late, started to train as a mental nurse. Before she completed her training she married, in 1941.

3). Temperament. She was said to be a cheerful, friendly person, affectionate and demonstrative. After Wales, she thought the people of Kent stiff and unfriendly. She was very fastidious about her appearance and over-conscientious about the housework. She was not an unduly anxious person and did not seem

unduly affected by the war, although she spent most of it in a distinctly noisy corner of Kent.

4). Sexual Life. She was interfered with physically by an old man when she was four years old, and while her father was away at the war, her grandfather also stimulated her physically in undesirable ways. In her early adolescence an uncle made love to her in everything short of actual intercourse. The verification of these incidents was a matter of some difficulty. The first incident was authentic, and the later ones were quite possible, having regard to the character of the men concerned. In 1941 she married a steady-going man, considerably older than herself. He had been working for the same firm since 1924 and was strictly temperate in all his habits. From the first the patient had a dislike of intercourse and a fear of pregnancy. She had a boy in 1943 and the confinement was long and difficult. This did not improve matters, but her husband was very understanding. He was very fond of the patient, and she of him, and both were anxious for any help towards making their sexual relations easier.

5). Summary of Causative Factors. There may well have been an element of hereditary predisposition, but the main blame must be laid on her early developmental situation. Her early unfortunate sexual experiences were obviously still highly charged emotionally when she became ill, and presumably had a lot to do with her difficulty of sexual adjustment with her husband. The death of her mother affected her profoundly, and shortly after that she was much shocked when a sister



had an illegitimate child.

#### CLINICAL MANIFESTATIONS.

She was referred to the psychiatric department of a large general hospital by the gynaecologist, to whom she had been referred with a view to a possible uterine fixation. She refused to be examined vaginally and appeared strange in manner.

In a long psychiatric interview, she was able to abreact much emotion associated with her early life and improved dramatically, so much so that the gynaecologist conceived a new respect for psychiatry. Five weeks later, however, she complained that she "was in the clouds again". At another long interview she talked on and on, quite oblivious of her surroundings, giving a gruesome account of her mother's death from cancer, and the subsequent process of laying her out. In the course of this recital it became clear that the patient felt herself responsible in some way for her mother's death. Superficially the picture was depressive, but there was a curious lack of affect and her attitude was rapt and trance-like. At times, also, there was incongruity in her emotional responses in relation to her spoken thought, so the possibility of schizophrenia was kept in mind. Treatment at Barming Heath Hospital was advised, and she was admitted on 30/10/48.

On examination there, she was odd in manner and indifferent to her environment. She spent much time staring raptly into space with her lips moving slightly

from time to time. Her affect was thin and her speech incoherent. She said with a smile that she frequently heard voices saying she was mad, and affirmed that other people could read her thoughts and control her actions. She ruminated constantly on topics from the past, and showed frequent blocking of thought. At first she showed little interest in social activities, but soon began to make advances, and later occupied herself with work in the ward. Otherwise she showed no change before electro-narcosis was begun.

#### DIAGNOSIS.

Physical and serological examination revealed nothing of significance. The possibility of a depressive illness required serious consideration, in view of the preoccupation with the painful topic of her mother's death and her feelings of responsibility for it. These latter, however, were short lived, and there was a lack of affective power which became more obvious as observation was continued. Moreover, she was not retarded. She showed no clouding of conscious and no defect of memory to suggest an organic origin for her symptoms. There was a considerable element of anxiety when she was first seen, but this was not in evidence on later occasions, and hallucinations and ideas of passivity argued a more serious condition than a straightforward anxiety state. Taken in conjunction with her manner and her thin, incongruous affect, they led to the conclusion

that she was a schizophrenic. Her strangeness of manner, preoccupation with hallucinations and withdrawal from contact with her environment suggested predominantly the hebephrenic type.

#### TREATMENT.

She was given 8 treatments by electro-narcosis, starting on 18/11/48, administered three times a week. She received atropin and thiopentone premedication. The electrodes were placed frontally and moved temporally during the course of each treatment. The average coma-dose was 130 mA. Apart from the fact that she was somewhat sensitive to the action of thiopentone, no difficulties were encountered.

#### RESULT.

During her course of electro-narcosis she made rapid progress. She was working usefully and appeared almost normal in manner when it was over. She was no longer hallucinated and had lost her ideas of passivity. Her speech was connected and relevant, and her power of emotional response was much greater. Treatment was stopped because she seemed somewhat facile, and talked too easily about the death of her mother, saying that her experience then no longer had its former hold over her. Taken in conjunction with the episodic nature of her symptoms and the very rapid response to treatment,

these signs suggested that further electro-narcosis might precipitate a phase of confusion and excitement. As it turned out, she was uncertain and erratic in conduct for the next three weeks, at times being frankly impulsive. She had periodical surges of uncontrolled emotion and behaved in a very histrionic way. She became once more incoherent in speech, and expressed bizarre ideas of a semi-religious kind. Then improvement again occurred. She became quiet and normal in manner, and her speech was once more relevant and connected. Her histrionics disappeared and she settled down to occupation. Her bizarre thought-content was no longer expressed, and she began to make realistic plans about resuming her life at home. She was able to talk in a sensible way about her early experiences and the death of her mother, saying that these had lost their hold over her. Her short-lived and unhealthy "couldn't care less" attitude had entirely disappeared. She was no longer hallucinated, nor was she expressing ideas of reference.

She accordingly left hospital on 29/1/49, 10 weeks after electro-narcosis was begun. As she was free from psychotic symptoms, and mentally more settled than at any time since she came under observation, her illness was considered to have undergone complete remission.

#### DURATION OF ILLNESS.

She had been ill for about 6 weeks when electro-narcosis was begun.



Category 1. No 15.

CASE 89. Female. Admitted 16/10/48. Age 24.

AETIOLOGY AND PSYCHOPATHOLOGY.

1). Family History. There was no family history of mental or nervous disorder. The patient's father, however, deserted her mother while the patient was an infant. There were no other children of the marriage.

2). Early history and Development. She was brought up in one of Dr Barnado's homes. Her early life was uneventful there. She was rather below average as a scholar, but there was no question of her being ineducable. At 14 she went into domestic service in a vicarage. She did quite well for nearly 6 years and then ran away without a word of explanation. For the next 2 years she was a ward-maid in a general hospital. She left that job also without notice just before she was married.

3). Temperament. She mixed quite well with others, but from an early age she was inclined to worry unduly about trifles, and was easily upset, especially by criticism. She had an uncertain temper, and was inclined to "Fly off the handle" unexpectedly. She also tended to act on impulse, without thought for the morrow.

4). Sexual Life. She married in 1946, when 22 years old. Her husband was a quiet, decent fellow, who made a good job of looking after their only baby of 10 months, while the patient was ill. She had shown no sign of being a problem as regards sexual behaviour before her marriage.

5). Summary of Causative Factors. Her broken home and orphanage upbringing undoubtedly played a large part in predisposing her to mental illness. Her attitude to the demands of society was always rather resentful and rebellious. A student of the depth psychologies might have found significance in the fact that she left her husband to "Hold the baby", thereby reversing the situation which had been forced on her mother.

#### CLINICAL MANIFESTATIONS.

Her symptoms dated from the birth of her baby. She became intensely worried about trifles of all kinds. Her fears then crystallised into a panic feeling that she was going to die. She also got very upset if she got a tune "On the brain", as she was sure this indicated severe mental abnormality. In the early stages of her illness she cried a lot, sometimes all through the night. Then she took to wandering aimlessly away from home at any hour of the day or night, leaving the baby to its own devices. Her husband got leave from his work to cope with the situation, and took her away for a holiday, but when she came back she was worse. Medical aid was invoked, and she was admitted to Barming Heath Hospital on 16/10/48.

On admission she was in a state of excitement. Unless restrained, she rushed about wildly and broke windows and crockery. She could do nothing for herself and required supervision over her diet and toilet. She screamed and shouted inconsequent nonsense, and said she could hear horrible voices telling her she was to

be consigned to a dark hole.

About a fortnight after admission the picture had changed to one of semi-stupor. She made efforts to answer questions, but showed a severe degree of thought-blocking, which obviously caused her perplexity and distress. She continued to ruminate on hallucinatory experience of a predominantly unpleasant type, and expressed ideas of reference. She said that her troubles were due to other people "Having it in for her". She was withdrawn from contact with her environment, and showed severe flattening of affect. Apart from one or two further short phases of pallid excitement, she showed no further change before the start of electro-narcosis on 25/11/48.

DIAGNOSIS. Physical and serological examination revealed nothing significant. During the periods when she was amenable to testing she showed no clouding of consciousness; she was correctly orientated, and only showed amnesia for the very acute phases of her illness. She was not over-sensitive to impressions, nor did she show the tendencies to embroider and fabricate, characteristic of delirium of organic origin. During her excited phases she showed no acceleration or elation, nor was there any distractibility or emotional lability. At no time did she show a characteristic depressive emotional reaction, and her slowness of thought was due to blocking, rather than retardation. There was a depressive suggestion about her delusion of being consigned to a dark hole, but her attitude to it was resentment against

the perpetrators of the deed, rather than acceptance of it as a just punishment. The diagnosis of a manic-depressive illness was therefore rejected. The alternation of phases of excitement with semi-stupor indicated schizophrenia of the katatonic type.

#### TREATMENT.

She was given 5 treatments by electro-narcosis between 25/11/48 and 4/12/48. She received atropin and thiopentone premedication. The electrodes were placed frontally, and moved temporally during the course of each treatment. The average coma-dose was 135 mA. No difficulties were encountered.

#### RESULT.

Her improvement was extremely rapid, so she was only given a short course, to avoid precipitating a further phase of excitement. At the end of her course, she was much brighter, and more interested in her environment. She was socially active and interested in work at the occupation centre. She continued to respond well to measures of rehabilitation, and was able to leave hospital on 15/12/48, 3 weeks after electro-narcosis was begun. Her illness was considered to have undergone complete remission.

DURATION OF ILLNESS. She had been ill for 11 months when electro-narcosis was started.



Category 2. No 1.

Case 6. Female. Admitted 13.2.47. Age 27.

AETIOLOGY AND PSYCHOPATHOLOGY.

1. Family History. There was no family history of nervous or mental disorder. Her father had a "business" whose nature he would never disclose. This failed in 1939, but he was able to salvage enough from the wreck to provide a modest suburban life for himself, his wife, and only child - the patient. The mother was a placid, reasonable woman who was upset by her daughter's illness, but was co-operative and grateful for everything done.

2. Early History and Development. The patient's early years were uneventful. At school she was not particularly bright. She did not win a scholarship for secondary education, so her parents paid fees for her to go to a technical school, where she took a course in domestic science. She then kept house for her parents until 1939, when she went to work in a local armaments factory. She continued at that job until the spring of 1943, when she gave it up because she was pregnant.

3. Temperament. She was a placid, likeable girl, easy to get on with and hard to upset. She was rather slow to grasp things, but equally slow to forget. Her one talent, as a girl, was for music, and she quite enjoyed playing in public.

4. Sexual Life. As a girl she showed little interest in boys. Rather, unexpectedly, in 1940, she married her father's errand boy. Her parents would have liked her to be socially more ambitious, but accepted her choice. She had apparently been determined to marry

him for several years, without saying much about it; he certainly turned out to be a decent, conscientious young man, and was obviously fond of the patient and very attentive when she was ill.

5. Summary of Causative Factors. She was a simple girl, not very intelligent, given to fixed ideas, with poor powers of adaptation. The first signs of serious instability occurred when she was pregnant, and had to leave a repetitive factory job to which she seems to have been ideally suited. The only other known precipitating factor was distress about a cousin, a childhood friend, who was missing and presumed killed during the war.

CLINICAL MANIFESTATIONS. During her pregnancy, about four years before her admission to hospital, she thought she had tuberculosis. This was investigated, but she refused to accept the verdict that nothing was wrong, at any rate for several months. After confinement her fears disappeared and she looked after the child well, but remained apprehensive about her health. The actual onset of her mental illness was sudden, at the end of January 1947. She complained of a swelling in her throat, for which her doctor gave her drops to be taken in milk - presumably Lysol's solution. She said this numbed her, and caused her to lose all power of feeling. The following day she appeared to be in a trance, after which she became very sleepless. A few days later she waved a knife about, remarking that she had no blood in

her body and had lost the power of feeling. She became excitable and then said she was in Jesus' arms in the company of various relatives who had died. She was then admitted to Barming Heath Hospital under certificate, on 13.2.47.

She grinned and grimaced in a foolish way and showed only thin, facile affective responses. She said she heard voices coming from the wall behind her, and claimed to have frequent visions of God and Heaven. She had bizarre ideas of bodily change, saying that she was quite unnatural. She blamed the doctor for giving her some medicine which made her insane, and said he influenced her mind to make her live in a world of make-believe. She had 6 E.C.T. treatments between 2.4.47 and 14.4.47. For about a fortnight she showed increased interest in her environment, and greater power of emotional response. She then relapsed into her former state, but in addition said she felt everything round her was unreal. She showed increasing abstraction during the next few months, with progressive emotional failure and an increase of silly mannerisms. In January 1948 her speech was incoherent and inconsequent. She said she spent her time listening to something she called "the bell". She admitted hearing voices, one of which said "Mumley Grove says can't remember, are they?" She screamed at times for no apparent reason and was mildly impulsive in conduct.

DIAGNOSIS. Clinical and serological investigations revealed nothing significant. There was, perhaps, a

slight swelling of the thyroid, but no tachycardia, tremor of the fingers or vasomotor lability. Her blood pressure was normal. She was not considered to be suffering from thyrotoxicosis.

Her symptoms were quite typical of the hebephrenic sub-type of schizophrenia, with silly mannerisms, pre-occupation with hallucinations, mild impulsiveness and rapid progression to a vegetative state. The possibility of a toxic psychosis associated with thyroid disease was excluded. The evidence in favour of thyroid disease was not convincing, nor were her symptoms those of an organic psychosis, as she showed no involvement of the sensorium before having E.C.T.

TREATMENT. She was given twelve treatments by electro-narcosis, three times weekly, starting on 29.1.48. She received atropin premedication only. The electrodes were placed temporally and the average coma dose was 120 MA. No difficulties were encountered.

RESULT. After her course of treatment she had a short confusional episode lasting five days. Following this she was much brighter and more energetic. She was willing to work and to be shown how to do things. Her hallucinations were no longer in evidence and she was not impulsive any more. Her affect was shallow and her mannerisms were still conspicuous, but a month after her treatment she was able to start going home on leave.

She continued to respond slowly to the process of rehabilitation and was able to go home on 3.6.48,



Category 2. No 3.  
Page 16. Female. Admitted 20/11/46. Age 24.  
seventeen weeks after treatment by electro-narcosis was begun. She still showed affective thinning and a tendency to smile in a fatuous way, but was sociable and usefully employed. No signs of an active schizophrenic process were present. She was regarded as having made a social recovery.

DURATION OF ILLNESS. Ignoring premonitory signs, she had been ill for just under one year when electro-narcosis was administered.

Coming to the father's death, but the patient attended school regularly and did not fall. She was then in a variety of domestic jobs until the outbreak of war, when she undertook factory work in Belfast. She was steady and reliable, and her work record was good. At the end of the war she took a domestic job in a hotel in Liverpool. Her work was satisfactory, but she apparently disliked the work, and made few friends. She stayed in her job, however, for over a year, until she became mentally ill.

Her Temperament. She was described as gentle and reserved, with little capacity for making friends, but faithful to the few she did make. She was very independent in her attitude to her family. She was fond of sewing and was a good needlewoman, being able in this way to indulge fanciful ideas in her dress. She was not fond of dancing or social occasions, as her main recreation consisted in unaccompanied visits to the pictures.

Sexual Life. So far as was known, she had little

CASE 16. Female. Admitted 20/11/46. Age 24.

AETIOLOGY AND PSYCHOPATHOLOGY.

1). Family History. She came of an Ulster working class family, and was the seventh of nine children. Her father died of heart disease when the patient was a small child, but her mother was alive and well, though elderly. There was no family history of mental or nervous disorder.

2). Early History and Development. Birth and infancy were normal. Later on conditions were rather hard owing to the father's death, but the patient attended school regularly and did quite well. She was then in a variety of domestic jobs until the outbreak of war, when she undertook factory work in Belfast. She was steady and reliable, and her work record was good. At the end of the war she took a domestic job in a hotel in Llandudno. Her work was satisfactory, but she apparently disliked the Welsh, and made few friends. She stayed in her job, however, for over a year, until she became mentally ill.

3). Temperament. She was described as gentle and reserved, with little capacity for making friends, but faithful to the few she did make. She was very independent in her attitude to her family. She was fond of sewing and was a good needlewoman, being able in this way to indulge fastidious personal tastes in dress. She was not fond of dancing or social occasions, so her main recreation consisted of unaccompanied visits to the pictures.

4). Sexual Life. So far as was known, she had little

to do with men, and never had any special boy-friend.

5). Summary of Causative Factors. The manner in which she broke down suggested that she had undergone some traumatic experience in Wales, but no evidence of this was ever obtained. There were certainly schizoid traits in her personality, which were presumably accentuated in the lonely conditions in Wales, but this combination was hardly adequate to account for her illness, in view of her previous record. There must presumably have been a strong endogenous element.

#### CLINICAL MANIFESTATIONS.

On 9/11/46 she suddenly arrived without notice at the house of a married sister in Kent. She had no luggage, and said she had come because of a premonition that her sister was ill. This was not the case. She was so strange in manner that her sister wondered if she had taken to drink, but she made no effort to procure any, so this idea was given up. During the next few days she behaved normally enough in the presence of strangers, but when alone with her sister talked incoherently. She said she had invented the atomic bomb, and that the Germans were after her on that account. She kept demanding to see General Montgomery, and on one occasion when the wireless made an announcement about "Extra Troops for Palestine", she said she was going there by special orders from him. She made several attempts to ring up the War Office, and finally tried to go there in person. The doctor was then called in and she was admitted to Barming Heath Hospital on 20/11/46.

On examination she was quiet, preoccupied, and indifferent to her environment. Her affect was very thin, and she displayed many facial mannerisms which could more aptly be described as contortions than as grimaces. She had many outbursts of silly laughter, and often adopted curious poses. She said she was a close personal friend of General Montgomery and had given him details of the German plan to invade Britain in 1940. She claimed to have invented the atom bomb and the flying bomb, and said she was in constant touch with the War Office by telephone. She said she could hear the voices of officers who sent her messages. Her speech was incoherent and she was incapable of social activity or useful work.

In the months that followed she showed some improvement. She performed a little simple routine work, and occasionally allowed herself to be persuaded to attend hospital dances, where she played the wallflower. Her thinning of affect grew more pronounced, but her expression of ideas about General Montgomery and military affairs became infrequent. She was absorbed in fantasy and could be seen muttering to herself in corners, but her answers to simple questions became more accurate and straightforward. No dramatic change occurred before electro-narcosis was begun.

#### DIAGNOSIS.

Physical and serological examinations revealed nothing of significance. In her more accessible



moments there was no evidence of clouding of consciousness or of memory defect. At no time did she show elation or depression. The clinical picture was characteristic of schizophrenia. As her vague paranoid ideas about being pursued by the Germans soon faded, to be replaced by absorption in fantasy, she was regarded as belonging to the hebephrenic type. She showed the characteristic mannerisms and inactivity, though she was never notably impulsive.

#### TREATMENT.

She was given 12 treatments by electro-narcosis, three times weekly, starting on 26/2/48. She received atropin pre-medication only, before the first 4 treatments. On the fourth occasion she was very restless and afterwards indicated that she had some memory of the initial shock, which she described as a bright light accompanied by a burning feeling. Subsequently she was 0.35 gramme Sodium Amytal intravenously before treatment, with satisfactory results. The electrodes were placed temporally. During the first 4 treatments the average coma-dose was 135 mA. Subsequently 110 mA proved sufficient. No other difficulties were encountered.

#### RESULT.

After 8 treatments, she had a short period of excitement lasting for a week-end. She was

unusually restless, and once more said she was a personal friend of General Montgomery. She also claimed to be the Duchess of Windsor and said she was on intimate terms with the Royal Family. This phase subsided as quickly as it had arisen, and treatment was not interrupted. The general trend during her course of electro-narcosis was towards improvement. She became more alert and interested in her environment, and her emotional responses showed greater power. Once her course was finished, however, she relapsed into a state of extreme fatuity, with florid mannerisms, in which she was incapable of work. After a fortnight improvement once more occurred, and she co-operated well with rehabilitation measures. Her progress was slow but steady from that point on, and she was able to leave hospital on 1/7/48, 18 weeks after electro-narcosis was started. Her affect was still shallow and her grin too ready, but she was working steadily and made full use of her social opportunities. Her former abnormal thought content was no longer in evidence, and her speech was connected and rational. She was therefore regarded as a social recovery.

#### DURATION OF ILLNESS.

Although she was off work for a month owing to "Nervous Debility" during the summer of 1946, clear evidence of illness first appeared in November 1946. She had therefore been ill for 1 year and 3 months when electro-narcosis was begun.

Case 18. Female. Admitted 19.10.47. Age 32.

AETIOLOGY AND PSYCHOPATHOLOGY.

1). Family History. The father was a farmer. He was described as a gentle, sensitive, quiet man, who sheltered his daughter and made her decisions for her. When he died in 1936, she transferred her devotion to him to her mother, who was a stable, homely woman. She suffered from migraine, for which she attended the National Hospital, Queen Square. The patient was the only girl in the family and was supposed to have been indulged on that account. She had an elder brother in a good job in Birmingham, and a younger one who did well in the R.A.F. during the war. There was no known history of mental disorder.

2). Early History and Development. After an uneventful infancy she did quite well at school, but used to worry rather a lot over her homework. For two years after leaving school she stayed at home, then trained as a hairdresser and opened a small business at home. In April 1941 the house was seriously damaged by a bomb and could only provide living quarters for her mother and herself. She was then taken on as an engineering trainee; she apparently enjoyed the work, but broke down five weeks later.

3). Temperament. She was sensitive and took criticism very much to heart. Within the family circle and with old friends she was quite cheerful and sociable, but showed no social enterprise beyond those limits. She was very dependent on her parents and never did anything

without consulting them first.

4). Sexual Life. She had a fairly serious attachment to a young man, a solicitor's clerk. He ~~was~~ always wanting to take her out and thereby antagonised her parents, who thought she should stay at home more. This conflict upset her considerably, and the parents put the blame on the young man. They persuaded her to give him up, which she did, but he was not to be put off so easily. Finally the patient's father had a row with him and told him never to come back. Some years later she had another boy friend. Her father was dead by then, but her mother effectively broke it off.

5). Summary of Causative Factors. From an early age she showed many schizoid traits of personality, which were encouraged by the attitude of her parents. Her first two breakdowns were in reaction to situations demanding adjustment to changed conditions. Her third occurred without any obvious exagenic cause.

CLINICAL MANIFESTATIONS. Three months after her father died in 1936 she complained of pains in her head, and became strange in manner and erratic in conduct. She laughed for no obvious reason, was hallucinated for hearing and believed people were laughing at her. She used to lock herself in her room and refuse to come out. She was admitted to a mental hospital near London and was discharged nine months later as recovered.

On 12.9.41, while training for engineering work, she was admitted to Barming Heath Hospital. She was



wildly excited, noisy and impulsive. She rushed about in a naked state unless restrained and said she had shot her mother and hung her body up on a peg in the ward. When she settled down somewhat she showed typical schizophrenic mannerisms, thinning of affect, inconsequence of speech and vagueness of thought content. She slowly improved, with the help of occupational therapy and went home in May 1942. She was regarded as recovered.

She was again admitted to Barming Heath on 19.10.47 with a history of having been strange in manner for about a month. During that time she was excitable and talkative at first; then she accused the neighbours of plotting against her and tried to assault one of them. After admission she was overactive and ceaselessly impulsive. She displayed considerable excitement, but no genuine elation or acceleration. There was marked incongruity between her emotional reactions and the current of spoken thought. She frequently held conversations with hallucinatory voices, and expressed bizarre and rather grandiose delusions, e.g. that she had to go and attend to her Royal Father's horses, which were running about wild. The following was a verbatim sample of her speech; "I prefer the hussars best but he was killed. It was only a man about the electric light. I was the eucalyptus lady once. Last time I saw you, you were wearing prison boots." There was no spontaneous improvement before electro-narcosis was started.

DIAGNOSIS. Physical and serological investigations revealed nothing significant. The possibility of recurrent mania had to be considered, but she showed no real elation, and no acceleration, distractibility or affective force. The domination of her case by excitement and overactivity indicated the katatonic type of schizophrenia.

TREATMENT. She was given twelve treatments by electro-narcosis, three times weekly starting on 26.2.48. She received atropin premedication only. The electrodes were placed temporally and the average coma dose was 95 mA. No difficulties were encountered.

RESULT. When her treatment was finished she showed improved affective power, and was more alert and interested in her surroundings. Her speech abnormality had cleared entirely and she conversed normally, though rather slowly, on simple topics. She was no longer hallucinated or expressing bizarre ideas. Socially she was making efforts, and her work was quite useful. She continued to co-operate with rehabilitation measures and left hospital on 6.5.48, ten weeks after electro-narcosis was started. She showed considerable affective thinning and slowness of thought, but was improving steadily in concentration and persistence at work. She was regarded as a social recovery.

DURATION OF ILLNESS. She had been ill for five months when electro-narcosis was used.

CASE 19. Female. Admitted 3.1.46. Age 22.

AETIOLOGY AND PSYCHOPATHOLOGY.

1). Family History. Her father was a printer, a "nervy" and bad-tempered man. Her mother was a rather weak and immature woman. The patient herself was an only child. There was no family history of mental disorder, but her paternal grandmother was addicted to alcohol in the closing years of her life.

2). Early History and Development. Her infancy was uneventful. She was not very bright at school and always found arithmetic difficult, but the possibility of mental deficiency was never raised. After school she started to train as a shorthand typist but after a few weeks refused to go any more. After that she remained at home doing odds and ends of domestic work. In April 1943 she was called up, and served in the A.T.S. for a year, doing menial work. Towards the end of her service she complained of being tired, and snapped at her superiors when rebuked. She was accordingly discharged and returned to her former state of inactivity at home.

3). Temperament. From a very early age she was afraid to meet other people. She also felt jealous of her contemporaries, as she apparently felt they were more favoured than she.

4). Sexual Life. She never showed any interest in boys.

5). Summary of Causative Factors. So strongly schizoid a personality must presumably have been the result of a

constitutional factor, at least in part. Very early developmental factors may also have contributed, but her later home situation was unfortunate, and rather calculated to aggravate her schizoid tendencies. Her father snarled and nagged in an ineffective way, without taking realistic steps to help the girl, while the mother pandered to her, partly in a well-intentioned effort to shield her from the effects of her father's temperament. A series of failures in her efforts to adjust led to a defeatist attitude and contributed largely to her breakdown.

CLINICAL MANIFESTATIONS. She was discharged from the A.T.S. in April 1944, and did no work after that. She deteriorated slowly until January 1945, when she complained that other people were talking about her and laughing at her. She had frequent angry screaming turns and said her father must not smoke in case she were to be burned up. She refused to go to bed at night, and walked up and down her room alternately swearing and screaming. On 2.6.45 she was persuaded to enter Barming Heath Hospital as a voluntary patient. She was aloof, indifferent to her environment and very shallow in her emotional responses. There was no evidence of delusions or hallucinations, but her whole bearing and attitude was of childish irresponsibility. After six months in hospital she was rather more stable and reliable in conduct; she was also doing simple routine work under supervision. She went home in August 1945, but slowly deteriorated and was readmitted under certificate on 3.1.46.



The onset of definite symptoms was in November 1945. She became noisy at nights, swore frequently and required a lot of supervision to prevent her from lying in bed all day and neglecting herself. When examined in hospital again her apathy and emotional failure were more profound than before. She laughed and grimaced continually and maintained grotesque poses for considerable periods of time. She frequently talked in answer to hallucinatory voices, but her utterances were disjointed and incoherent. As time passed she became capable of simple routine work under supervision, but otherwise showed no change until given electro-narcosis.

DIAGNOSIS. Physical and serological investigations revealed nothing significant. When electro-narcosis was started the diagnosis was not seriously in doubt. She had never shown any depressive emotional reaction or mental content. During her excited phases there was no elation or acceleration. When first admitted to hospital, the picture was strongly suggestive of schizophrenia of the simple type, but later the hallucinations, mannerisms and general deterioration led to her being classified as a hebephrenic.

TREATMENT. She was given twelve treatments by electro-narcosis, three times a week, starting on 11.3.48. She received atropin premedication only. The electrodes were placed temporally and the average coma dose was 85 mA. No difficulties were encountered.

RESULT. She showed slow but definite improvement while

receiving treatment. At the end she showed more interest in her surroundings, was brisker in her movements and showed greater capacity for emotional response. Her manner was more normal and she was more sociable. She went to dances and other entertainments, and showed improved concentration and persistence at work. There was no evidence of hallucinations. Her improvement was well maintained and she co-operated well with the usual rehabilitation programme. She left hospital on 3.6.48, twelve weeks after electro-narcosis was started. She still showed some affective flattening, oddity of manner and vagueness of thought content, but was brisker, more stable and more adjusted socially and economically than at any time since she first came under psychiatric observation. She was regarded as a social recovery.

DURATION OF ILLNESS. Her second breakdown started in November 1945, so she had been ill for two years and four months when electro-narcosis was begun.

CASE 24. Male. Admitted 23.12.47. Age 26.

AEIOLOGY AND PSYCHOPATHOLOGY.

1) Family History. Neither parent was very intelligent, and the mother, in addition, showed clear signs of senile deterioration. She made vague suggestions that her husband drank, but he was a healthy looking rustic, in a much better state of preservation than she. The patient was one of a family of eight. One boy was sent to an approved school owing to truancy and petty delinquency, but was later lost sight of. No further relevant information was elicited.

2) Early History and Development. He was brought up in rural Kent, went to the village school, and was described as "A good boy; no trouble". He was an average scholar; after leaving school he was in casual work on farms and as a builder's labourer. He joined the Territorials before the war, was called up when it broke out, and became a prisoner of war at Dunkirk.

3) Temperament. There was no evidence indicating serious abnormality. He was slow to make friends and at times was surly and unsociable, but used frequently to go out in the evenings with other boys. He was described as a quiet, good, steady worker.

4) Sexual Life. Before the war he once brought a girl friend home; he had no serious love affairs, but was not unduly shy or awkward with girls.

5) Summary of Causative Factors. There seems little doubt that his illness was due to the impact of his experiences as a prisoner of war, acting on a simple and rather inadequate personality of yokel extraction.

CLINICAL MANIFESTATIONS. He was described by his parents as having been a different boy since his return from Germany in May 1945. He was jumpy, irritable and bad-tempered, and could not settle to anything. He worked as a cowman for nine months, but was unreliable and often refused to get up in the morning. He grew increasingly suspicious and secretive and gradually ceased to make even a pretence of working. Finally, on 23.12.47, he placed a mat in the window of his room and drew knives across his throat without cutting himself. His family took fright and he was admitted to hospital, under certificate, the same day.

He was dull, detached and apathetic. The clinical picture was dominated by his affective failure and lack of energy. His deportment was peculiarly stiff and awkward, and he appeared lost in fantasy. He expressed ideas of reference about being watched, and said that advertisements appeared in the daily press containing sarcastic remarks about him. He had vague hypochondriacal ideas associated with the notion that his mind was being influenced by other people. He was very unsociable and incapable of useful work. He showed no significant improvement before electro-narcosis was started on 27.2.48.

DIAGNOSIS. Gross organic factors were ruled out by physical and serological tests. The oddity of his manner, coupled with emotional failure and ideas of reference and passivity indicated schizophrenia rather than the depressive component of an affective psychosis. The preponderance of affective failure in the clinical picture over his



paranoid trends was the reason for classifying him as of the simple type of schizophrenia.

TREATMENT. On 27.2.48. he started a course of twelve treatments by electro-narcosis, three times a week, with atropin pre-medication only. The electrodes were placed temporally and the average coma dose was 100 m/A. No unusual or untoward phenomena were noted.

RESULT. Immediately after his course of treatment he showed increased activity and interest in his environment. His power of affective response was appreciably increased. His manner was still stiff and awkward; and his thought content vague and ill-defined, but his ideas of reference and passivity had vanished. He was making efforts at social activities and was beginning to work usefully in the ward.

On 6.5.48, ten weeks after electro-narcosis was started, he was discharged from hospital under Section 77(2) of the Lunacy Act. He still showed stiffness of manner, impaired emotional capacity and vagueness of thought content. He was therefore regarded as a social recovery. He was much more sociable and showed persistence and reliability at work.

DURATION OF ILLNESS. With a clear history of personality change dating from May 1945, the duration of his illness was computed at two years nine months at the time electronarcosis was started.

Category 2. No 6.

CASE 28. Male. Admitted 12.1.48. Age 39.

AETIOLOGY AND PSYCHOPATHOLOGY.

1) Family History. There was no known family history of psychosis. His father and mother were alive and well at the time of his first breakdown, but he had been estranged from them for many years. The father was unable to work; he was said to be suffering from "neurasthenia" following an accident to his eye. The mother did not reply to a letter notifying her of the patient's first admission to hospital. The patient had three brothers and one sister, who was said to be very bossy; she was reputed to have led her husband a very hard life.

2) Early History and Development. There was nothing noteworthy about his early years. He was an average scholar; he went to elementary school and left at fourteen. He then worked on a farm for three years, until he had the row with his parents. He then joined the Army and served for six years, leaving it in 1932. For four years he had various jobs as lorry-driver and chauffeur, and then got a permanent post as bus-driver to a large company. This work continued until his first illness.

3) Temperament. He was described as gay, friendly and sociable, with plenty of girl friends. He was fond of darts and the atmosphere of pubs, but actually drank very little. From an early age he had a bad temper, and used to say things which he later regretted, but he was never violent in his actions. He was not actually hypochondriacal, but

displayed rather too tender an interest in his own health.

4) Sexual Life. So far as is known he was not sexually promiscuous before his marriage in 1936. His wife was a pleasant, alert, sensible woman. They had one child in 1937.

5) Summary of Causative Factors. His pre-psychotic personality was certainly not schizoid but had characteristics more suggestive of the cyclothyme type. Nevertheless, significance appeared to be attached to his tempers, when considered in conjunction with his row with his parents, his behaviour to his wife described below, and his behaviour prior to his first admission to hospital. He displayed the characteristic egocentricity of a psychopathic personality, together with the trigger-like reaction of the predominantly aggressive type. There was, however, an ineffectiveness about him, something of the attitude of being "willing to wound and yet afraid to strike". This may have saved him from serious trouble, such as a murder charge, but probably contributed to his breakdown, as he had not the directness or ruthlessness to get out of difficult situations by the weapon of violent action to which his personality prompted him. His actual breakdowns were probably psychotic reactions to the impossible situations into which his psychopathy led him.

CLINICAL MANIFESTATIONS. He first became strange in manner early in 1939. He made various hypo-

chondriacal complaints, was thoroughly examined in a general hospital and reassured that nothing serious was wrong. After that he had various rows about nothing at home and broke some crockery. One day he punched the conductor of his bus on the nose "to teach him not to ring the so-and-so bell", and lost his job. He made various futile attempts to get other work, in the course of which he lost his luggage, but didn't seem to care. He said his wife was good for nothing as she wouldn't work or wash. The latter taunt was true as she had a troublesome dermatitis. He railed at her for spending too much money on the child, and finally wouldn't hand any money over to her at all. When he saw anyone in the street rubbing their noses, he took it as a personal insult, and when a stranger wished him "good-day" in the street, he spat at him.

He entered Barming Heath Hospital as a Voluntary Patient on 28.7.39. He showed a shallow superficial affect, and was largely indifferent to his environment and situation. He said that people were laughing at him and had a down on him, so that he had been done out of jobs and could not keep his wife and family. He quickly improved and left hospital on 3.9.39. He would have stayed longer, but wanted to join the army again when war broke out. He was regarded as having had a schizophrenic episode.

In fact, the army rejected him on account of his breakdown. As an able-bodied man, however, he could



name his own terms and did various jobs connected with driving and the motor trade. Although he was scared of bombing, he kept going until the war was virtually over. With the prospect of large scale demobilisation, the market hardened against him, and he was admitted to Barming Heath once more on 6.4.45. His clinical condition was similar to that on his previous admission. He was paranoid in attitude, said he had been unfairly treated and swindled out of jobs. He left hospital three weeks later without having improved. He came back for a brief spell in September 1945 and again in March 1946. He then said that he was continually being "shoved around" by strangers, who would come up to him in the street and deliberately push him into the gutter. For the first time he admitted being hallucinated; he described visions, which occurred by night and by day, of good friends of his whom he had known in the past, who gave him comfort and good advice. He was given ten E.C.T. treatments, after which he seemed rather brighter. By this time his wife had left him, so when he took his departure from hospital he stayed with his mother.

He came back to hospital on 12.1.48, having worked in the meantime as a farm labourer. He showed profound affective failure and was detached and indifferent to his surroundings. He said his mind was completely controlled by a German prisoner, who could make him do anything by psychic power. He

grinned and grimaced in a silly way, and showed incongruity between his affective responses and the current of spoken thought. His thought content was vague, he made no social efforts at all and was incapable of useful work. He showed no improvement until electro-narcosis was begun.

DIAGNOSIS. Clinical and serological examinations showed nothing significant. The possibility of recurrent mania had to be considered, especially in view of the cyclothyme elements in the pre-psychotic personality. There was never any elation or acceleration, nor was his mental content characteristic of mania. The clinical picture was, however, typical of schizophrenia of the paranoid type.

TREATMENT. He was given eight treatments by electro-narcosis, starting on 27.2.48. He received atropin pre-medication only. The electrodes were placed temporally and the average coma dose was 115 mA. All went well for six treatments. He was rather restless during the seventh, and during the eighth a short circuit occurred owing to the flex between the apparatus and the headband being defective. Treatment was immediately stopped but the patient said he could remember lying on the couch with bright lights flashing in front of his eyes and a sense of heat in his head. Not unnaturally he refused to have any more electronarcosis. The type of flex which caused the trouble was discarded and much stronger wire used. This trouble never recurred.

RESULT. He showed considerable improvement. He was much brisker and more alert and showed improved emotional power. His delusions and hallucinations were not in evidence at all. His general attitude was hardly co-operative and socially he was making no efforts, but he was doing some work, and showed improved concentration and persistence. He left hospital on 27.3.48, four weeks after electro-narcosis was started. As he was still out nine months later, he was regarded as a social recovery.

DURATION OF ILLNESS. He had shown no appreciable remission of symptoms between the beginning of 1945 and his admission in 1948. The duration of his illness when electro-narcosis was started was therefore just over three years.

Case 29. Female. Admitted 12.9.45. Age 29.

AETIOLOGY AND PSYCHOPATHOLOGY.

1. Family History. She was an Austrian girl who came to this country as a children's nurse just before the war, and was stranded here when it broke out. She came of Tyrolese peasant stock; her father kept a shop in a small town. Little useful information could be obtained owing to language difficulties, and the only member of the family seen was her brother, who came to take her home. There was no known history of mental or nervous disorder.

2. Early History and Development. She was born during the first World War. Conditions during her early childhood were hard, but less so in the small town conditions of the Tyrol than they would have been in Vienna. She was an average scholar, and was in domestic service as a children's nurse after leaving school. Her family were not sympathetic to the Nazi regime; there was no serious trouble, but the patient was glad of the opportunity to get to England. She learned the language well and made no effort to obtain repatriation through neutral territory.

3. Temperament. She was described as a quiet, serious girl who did not make friends easily.

4. Sexual Life. So far as was known she showed no interest in men at all.

5. Summary of Causative Factors. She was rather pushed from pillar to post during the war, going from



one job to another of a domestic type. She was in London during the Battle of Britain and the blitz. Separation from her family in these conditions was undoubtedly an important factor in her breakdown. Endogenous factors were also presumed to have existed.

CLINICAL MANIFESTATIONS. She was admitted to a mental hospital in the London area in February 1943. She was regarded as suffering from a schizophrenic episode whose predominant features were excitement and hallucinations. She was discharged after seven months. She then did canteen work for a time, and was then taken on as a student nurse at a general hospital in Kent, in February, 1945. The history of a previous breakdown was, of course, suppressed. She did quite well until August 1945, apart from being considered extremely reserved. Then she was noticed laughing to herself during lectures, and on one occasion she became excitable during the night. She became aloof and abstracted in attitude and resented any attempt to examine or treat her. Then more noisy episodes occurred at nights and her behaviour on the wards became erratic. She developed peculiar mannerisms and could not be retained in employment. She was, accordingly, admitted to Barming Heath under certificate.

At first she was morbidly preoccupied, indifferent to her appearance and surroundings, and almost mute. She showed little power of emotional response, but the predominant tone, such as it was, was of suspicion and resentment. She grinned and grimaced to herself for no

apparent reason, and often adopted strange poses. She muttered to herself, apparently in answer to hallucinations, but did not reveal their nature at that stage. She had frequent short bouts of excitement with impulsive over-activity, in which she was often noisy and aggressive.

In January 1947, as she had made no spontaneous progress, she was given E.C.T. After eight reactions, some improvement occurred. Her excited phases were rather shorter and less frequent, lasting about four days, and occurring about every six weeks. Between these attacks, the general level of conduct was better. She showed more interest in her environment and worked usefully. She still complained, however, of "feeling confused all the time". There was, in fact, no clouding of consciousness, but careful examination revealed thought-blocking and a degree of derealisation. She also admitted constantly receiving "messages in her mind" saying that her mother was dead, or giving other tidings, usually bad and always false. Her mannerisms were less florid after E.C.T., but thinning of affect persisted. Her condition remained unchanged until electro-narcosis was given.

DIAGNOSIS. Physical and serological investigations revealed nothing significant. The possibility of recurrent mania was considered, but rejected because she showed no real elation, acceleration distractibility, or other feature of an affective psychosis. As regards the schizophrenic sub-type to which she belonged,

paranoid and hebephrenic symptoms were noted, but the most persistent feature of her case was excitement, occurring in bouts as described. She was therefore regarded as a katatonic type.

TREATMENT. She was given four treatments by electro-narcosis, starting on 6.4.48 and finishing on 13.4.48. At the time she was treated, it was felt that patients showing recurrence of symptoms in regular cycles were more likely than others to be thrown into confusional states by electro-narcosis. She was therefore given a short course, with atropin and sodium amytal premedication. The electrodes were placed frontally and the average coma-dose was 140 MA. No difficulties were encountered,

RESULT. Several days after Electro-narcosis was finished she had a severe confusional flurry lasting four days. During the further  $2\frac{1}{2}$  months that she was in hospital she had no other attacks of excitement or overactivity. In other respects also she was improved. She lost her "confused feelings" and was no longer hallucinated. She was more alert and interested in her environment and made more use of social opportunities. She was more reliable and persistent at work and her manner became easier and more spontaneous.

The hope of repatriation perhaps played a part in her improvement, but she knew that steps towards that end were being taken for three months before she had electro-narcosis. During those three months, no improvement occurred.

Category 2, No 1.

She left hospital on 1.7.48 twelve weeks after electro-narcosis was begun, with a view to proceeding home to Austria. As thinning of affect, stiffness of manner and vagueness of thought content were still discernible, she was regarded as a social recovery.

DURATION OF ILLNESS. She had been ill for two years and eight months when electro-narcosis was begun.

Violent, whether before or after contracting tuberculosis was not known. In any case, she died in a mental hospital. The patient had one older sister, mildly but still much worried about the patient's prospects in view of the patient's date.

3. Early History and Development. Her infancy was normal. She left school at 14; age was rather dull and slow, but there was never any question of regarding her as defective. After school she did various jobs of a domestic variety. For five years she was a maid in a large voluntary hospital. She liked the work and got on very well, but found the restrictions imposed in the end she had trouble with the gastro-intestinal system, and left. She then had various factory jobs which came to an end after the other. Finally she secured settled work in a pattern making factory with satisfactory earnings and a good welfare provision.

4. Development. She was a sensitive girl and noted criticism, and if she was put out. She was of a delicate and nervous build and was inclined to give way to other people in order to avoid them. She



Case 31. Female. Admitted 22.12.47. Age 28.

AETIOLOGY AND PSYCHOPATHOLOGY.

1. Family History. She came of a working class family.

Her father was alive and well at the age of 70, when the patient became ill. Her mother died when the patient was 9 years old, as a result of pulmonary tuberculosis. She became extremely confused and violent, whether before or after contracting tuberculosis was not known. In any case, she died in a mental hospital. The patient had one elder sister, kindly but dull and much worried about the patient's prospects in view of the mother's fate.

2. Early History and Development. Her infancy was normal. She left school at 14; she was rather dull and slow, but there was never any question of regarding her as defective. After school she did various jobs of a domestic variety. For five years she was a maid at a large voluntary hospital. She liked the work and got on very well, but found the restrictions irksome.

In the end she had trouble with the matron about a wireless, and left. She then had various factory jobs which came to an end one after the other. Finally she became settled at work in a modern clothing factory with satisfactory buildings and a good welfare service.

3. Temperament. She was a sensitive girl who hated criticism, and was inclined to sulk if put out. She disliked unpleasantness and rows, and was inclined to give way to other people in order to avoid them. She

was not unsociable, however, and enjoyed dancing. She showed adequate general initiative and independence. There was no evidence of undue swings of mood.

4. Sexual Life. She had no particular boy friends, but mixed quite easily and smoothly with men at work and on social occasions.

5. Summary of Causative Factors. A hereditary constitutional element may well have been present. Although her personality was not highly schizoid it was certainly rather inadequate and some schizoid traits were present. The loss of her mother when 9 no doubt created conditions unfavourable to the correction of schizoid tendencies. The development of pityriasis rosea and confinement in hospital were precipitating factors.

CLINICAL MANIFESTATIONS. In September 1947 she was noticed to be tired and losing interest in her job. She gave up her usual recreations and became self-absorbed and solitary. On 9.12.47, she was admitted to a general hospital with a generalised maculo-papular rash. The diagnosis of pityriasis rosea was confirmed by the visiting dermatologist. Her mental condition deteriorated rapidly, however, and she was admitted to Barming Heath Hospital on 22.12.47.

After admission she was morbidly pre-occupied, indifferent to her environment, and given to staring vacantly in front of her. She constantly smiled and muttered to herself and made strange gestures which were quite unrelated to her environment. She showed

a thin, shallow affective response with a predominantly depressive tone. She expressed vague ideas of being sinful and guilty and said she wanted to die. She lacked conviction, however, and at no time made any definite suicidal threat or attempt. She complained of hallucinations, mainly of voices making disparaging remarks. She showed no clouding of consciousness or memory defect.

As time passed the depressive elements in the picture faded out and the schizophrenic ones were accentuated. She became quite inert and preoccupied with hallucinatory voices. Her affect became thinner and shallower and her mannerisms more pronounced. In February 1948 she had a course of 10 electrically induced convulsions. For a fortnight she showed some improvement and then relapsed to her former state, no further change occurred before electro-narcosis was started.

DIAGNOSIS. Clinical and serological investigations revealed nothing significant. Her pityriasis rosea was improving before admission to Barming Heath, and continued to do well after. Delirium of organic origin was ruled out by the absence of clouding of consciousness or memory defect. In spite of her depressive content on admission she showed no real depression at any time, and the development of her case on schizoid lines put the diagnosis beyond doubt. The inertia, mannerisms and hallucinations were characteristic of the hebephrenic type.

TREATMENT. She was given 4 treatments by electro-narcosis, starting on 6.4.48. She received atropin and sodium amytal premedication. The electrodes were placed frontally and the average coma-dose was 120 MA. No difficulties were encountered.

RESULT. Her response was very rapid. After her 4 treatments she showed much more interest in her surroundings, and was brisker and more alert. Her manner was more normal and her hallucinations had cleared up. She was beginning to make social advances and was capable of useful work. Treatment was suspended as she was fatuous and irresponsible in attitude and a confusional episode was feared. Probably owing to the fact that she was made accessible to rehabilitation measures, no further electro-narcosis was required. She gradually improved at work, became more sociable and lost her ideas of passivity. She left hospital on 3.6.48, eight weeks after electro-narcosis was started. She still showed thinning of affect, manneristic tendencies and vagueness of thought content, so was classified as a social recovery.

DURATION OF ILLNESS. She had been ill for seven months when electro-narcosis was begun.



CASE 32. Female. Admitted 11.7.46. Age 37.

AETIOLOGY AND PSYCHOPATHOLOGY.

1) Family History. No independent account could be obtained. The patient herself gave a colourless account of an average lower middle-class family.

There was no history of nervous or mental disorder.

2) Early History and Development. No information about her early life was available. She attended an elementary school, left from the top standard and became a saleswoman for a local firm. She remained in this one post until she married at the age of twenty-one. When she was twenty-four she had a baby boy, who died at the age of five, in 1938. Her old firm took her back gladly in the same capacity as before.

3) Temperament. As so little was known about her, the Roischach test was used to try and illuminate her personality. It was done before and after treatment, and features believed to be due to schizophrenic deterioration were ignored. The results were accepted with due reserve. The test suggested that she combined strong primitive inner drives with inability to grasp general principles. As a substitute, she probably relied on the application of childhood precepts, which were bound, sooner or later, to prove inadequate to cope with inner urgencies. There were indications, however, that she was capable of detailed observation of her environment. Her capacity for response to

it was nevertheless probably limited to a stiff and rather immature formal correctness, devoid of warmth and spontaneity. The whole picture was of a woman capable of successful adaptation in conditions of humdrum routine, but defenceless once her inner drives were aroused.

4) Sexual Life. She married at twenty-one, and was described as "a very good wife and mother". She appears to have been colder sexually than her gypsy or Southern European appearance suggested.

5) Summary of Causative Factors. She was living in an area of South-East London under heavy fire from flying-bombs at the time she first broke down. It is plausible to suggest that this tremendous stimulus to primitive emotion, acting on a woman unable to handle it, was the main factor in causing her to break down. The husband suggested the death of her child and the death of her brother in action during the war as possible precipitating factors, but she appears to have taken both events singularly calmly.

CLINICAL MANIFESTATIONS. She was admitted to a private mental hospital in September 1944. She was apathetic, indifferent to her surroundings and hallucinated for hearing. She improved and went home in December 1944, but was not able to resume work. Her condition slowly deteriorated and she had another spell in the same hospital from June until October 1945. She again showed improvement,

but without becoming fit to work. In April 1946 she became very apathetic and developed a mannerism of contorting her neck. She was hallucinated for hearing and was shamelessly incontinent of urine. She grew steadily worse, and was admitted to Barming Heath Hospital under certificate on 11.7.46.

Her condition showed little change between then and the commencement of electro-narcosis on 6.4.48. She was indifferent to her environment, grinned and grimaced in a stupid way, and often twisted her neck from side to side. She was hallucinated for hearing and showed extreme vagueness of thought content. She used to talk about the anticipated pleasures of running a home and founding a family at a time when she was incapable of the simplest work, was masturbating freely and wetting herself frequently without any sign of shame, distress or even physical discomfort.

DIAGNOSIS. Physical factors were excluded by physical and serological examination. The absence of depression, ideas of unworthiness or other depressive content, ruled out an affective psychosis. The affective flattening, mannerisms, hallucinations, and regressive behaviour were characteristic of schizophrenia and suggestive, though not completely typical, of the hebephrenic sub-type.

TREATMENT. She was given twelve treatments by electro-narcosis, three times a week, starting on 6.4.48, with premedication by atropin and sodium

amytal. The electrodes were placed frontally; the average coma-dose was 145 mA. No unusual or untoward phenomena occurred.

RESULT. She improved steadily during her course of treatment. By the end, the total effect was striking. She had regained interest in her environment and showed improved emotional power. Her mannerisms had vanished. She cared for her appearance and was no longer faulty in habits. She enjoyed entertainments and social activities, and showed greatly improved persistence and concentration at work. Her plans for the future were more modest and realistic.

On 3.6.48, eight weeks after the start of treatment, she was discharged from hospital. Her improvement was well maintained, but as she still showed shallowness of affect and vagueness of thought-content, she was regarded as a social recovery.

DURATION OF ILLNESS. As she never returned to work after her breakdowns in 1944 and 1945, it would probably have been justifiable to regard her illness as one. However, her husband gave April 1946 as the starting point of the attack leading to her admission to Barming Heath. The duration of illness before treatment is therefore taken as two years.



Category 2. No 10.

Case 48. Female. Admitted 15.3.48. Age 31.

AETIOLOGY AND PSYCHOPATHOLOGY.

1). Family History. She came of a working class family. Her father was alive and well, but her mother was treated in a private mental hospital for a time when the patient was nine months old. A maternal aunt was regarded as eccentric and childish; she was treated at home on several occasions for so-called "nervous breakdowns" which were almost certainly psychotic episodes. The patient had one younger brother, a normal young man in the R.A.F.

2). Early History and Development. Her infancy was normal; she was an average scholar and worked hard although not particularly bright. After leaving school she had various semi-skilled factory jobs, the last of which she held for five years in the works of a large telephone company.

3). Temperament. She was shy and reserved from an early age. She had few friends, but being good with her hands she occupied her spare time fully even though alone. Her main relaxation consisted in an occasional visit to the pictures. She liked everything "just so", was extremely punctual and regular about her work, and worried rather unnecessarily about getting everything exactly right.

4). Sexual Life. She never showed any interest in men.

5). Summary of Causative Factors. A hereditary constitutional element was almost certainly present. Her

personality was both schizoid and rigid, with little capacity for adaptation. No definite precipitating factor could be discovered.

CLINICAL MANIFESTATIONS. In October 1942 she had a breakdown for which she was given E.C.T. as an outpatient at the psychiatric department of a London teaching hospital. She attended at intervals for a year, but was working during part of that time. She remained well until September 1947, when she suddenly announced that the blouse she was wearing came from the Black Market, so she would get everyone she knew into trouble. She lost interest in her work, her appearance and her environment. She seemed deeply preoccupied; her relatives thought she "couldn't be bothered" to tell them what was troubling her. She complained of being unable to concentrate, and especially that she could not remember a word of anything she had read. She grew increasingly inert and would have stayed in bed all day if her mother had not forced her to get up. In October she returned to the psychiatric department of the hospital in London where she had formerly been treated. She was given six E.C.T. treatments as an outpatient without any benefit at all. In March 1948, she was admitted to Barming Heath Hospital as a voluntary patient.

On examination she showed morbid pre-occupation and continued rumination on painful topics. There was profound apathy and affective thinning almost to the point of absence. She was odd in manner, and would sit or lie for hours staring into space with a vacant expression, unless aroused. Her thought content was vague

and blocking clearly occurred from time to time. Her speech was disconnected and her thought content vague, but definite proof of delusions or hallucinations was not obtained. She made no social efforts at all and was incapable of useful work. No improvement occurred before electro-narcosis was administered.

DIAGNOSIS. Physical and serological investigations revealed nothing significant. The evidence in favour of a depressive illness was at first sight considerable. This was her second attack; it had begun with ideas of unworthiness and inadequacy. At no time had she shown clear evidence of thought disorder of the schizophrenic type. Moreover, the traits of method and order in the previous personality could be interpreted as characteristic of the depressive type of personality. Nevertheless she failed to respond to E.C.T. More important, she showed no depression when in hospital.- her emotional state was of apathy and failure. The depressive content had entirely vanished and there was no retardation, only thought-blocking. Her curious manner and tendency to morbid rumination were also more characteristic of schizophrenia than depression. Her previous personality was also schizoid rather than depressive. Her regularity and method could also be accounted for otherwise than as characteristic depressive traits. They could be regarded as obsessional or as evidence of schizophrenic perfectionism, or merely as socially useful and desirable qualities. She was therefore diagnosed as

suffering from schizophrenia. Owing to the absence of content she was classified as of the simple type.

TREATMENT. She was given twelve treatments by electro-narcosis three times weekly, starting on 29.4.48. She received atropin and sodium amytal pre-medication. The electrodes were placed frontally and the average coma dose was 145 mA. No difficulties were encountered.

She was given a second course of thirty treatments, three times weekly, starting on 6.7.48. For the first nineteen she received atropin and sodium amytal premedication, but for the remainder she was given thiopentone. The electrodes were placed frontally and the average coma-dose was 155 mA. Again no difficulties were encountered.

RESULT. At the end of her first course of treatment she seemed extremely well. She was alert and interested in her surroundings, and was sociable. She had begun to do useful work. Nine days after her last treatment she suddenly relapsed into a condition similar to that she was in before having electro-narcosis. As she made no spontaneous progress in a month she was given a second course of treatment. She improved steadily as that progressed and by the end was once more interested in her surroundings, working usefully and socially active. She showed considerable shallowness of affect and vagueness of thought content, but was fully able to co-operate with rehabilitation measures. In view of her previous relapse, no attempt was made to hurry the process of



convalescence, so she did not leave hospital until 15.12.48, thirty-three weeks after her first course of electro-narcosis was started. She still showed slight thinning of affect and dependence on others to arouse drive and activity, so was regarded as a social recovery.

DURATION OF ILLNESS. She had been ill for seven months when electro-narcosis was started.

CASE 49. Female. Admitted 20/1/48. Age 36.

AETIOLOGY AND PSYCHOPATHOLOGY.

1). Family History. The patient's father was a builder. He was puritanical to the point of abnormality. For instance, if he saw the patient wearing a sleeveless dress when she was a young woman, he would not speak to her for three weeks. The mother "Wore the trousers". She was very active in local politics, and had little use for men. She regarded them all as beasts, who only wanted women for their own satisfaction. The patient was the third of four children. The eldest, a girl, married the son of a clergyman, and was later divorced. She believed she could carry on platonic friendships with innumerable men, but some of them turned out to have been not so platonic. The next, a boy, went into his father's business, but was given no status and was paid only a labourer's wage. He therefore broke with his father when he had learned the trade, and set up on his own in opposition. The youngest child, a girl, was regarded by the father as his own special property. Everything she did was perfect until she married one of her eldest sister's cast-off boy-friends. There was no history of frank mental disorder.

2). Early History and Development. Her infancy and early childhood were uneventful. She was an average scholar, and left school at 14. After that she stayed at home and helping with the clerical side of the business, largely in order to save the wages of a clerk. This state of affairs continued until she married in 1938.

The home life during this period was very difficult. The patient's father spent his evenings in his arm-chair criticising all members of the family except the youngest. Her mother, on the other hand, was usually out in pursuit of her political interests. If any other members of the family went out, there was usually a row with father about it.

3). Temperament. It was very difficult to obtain unbiased information on this point. It seems certain, however, that she had few if any friends, and no interests outside her home. She was always carefully and neatly dressed, and took great pains over her appearance. She struck her future husband as very ready to fight other people's battles with gusto. From her adolescence onwards, she was methodical almost to the point of pathology. If visitors were expected to tea on Sunday, she would start to prepare the room at lunch time on Saturday, and after cooking a meal she used to spend two hours cleaning the cooker. When she was engaged she expected her fiance to give her several days notice before he took her out to the pictures.

4). Sexual Life. A man was supposed to have exposed himself indecently to her when she was a child, but there was no suggestion that she had been seriously upset. When she married she had little knowledge of sex, but struck her young man as quite normal during courtship. On her wedding night, however, she told her husband that she did not think she could be a wife to him. She remained very frigid, and intercourse was rare and unsatisfying to both parties. She was afraid

of pregnancy, but had a son in 1940. After that she refused to have further intercourse for 6 years. Her husband did not go with other women during that time, but there were frequent occasions of friction. As her husband later said, if he tried to make love to her, that was wrong, and if he left her alone that was worse.

5). Summary of Causative Factors. The situation in her family in her formative years must bear the chief blame for her breakdown. The difficulties of her married life largely arose out of that situation, and in the end precipitated her actual illness.

#### CLINICAL MANIFESTATIONS.

The onset of her illness was gradual, and occurred in the setting of a way of life that could hardly be considered normal. Apart from the marital difficulties already mentioned, she kept her house like a furniture showroom. The sitting room was never used at all, so the whole family had to huddle in discomfort in the kitchen. She would not even allow anyone to undress in the bedroom. Her husband was physically unfit for military service and by some freak of chance her home town was never bombed. The war, therefore, passed her by entirely. The first sign of definite abnormality calling for psychiatric intervention occurred in November 1947, after a row about sexual relations. While feelings were still running high, her husband broke a cup accidentally while washing up. She flew into a rage



and said that God had told her to get a divorce. She explained that the butcher was in love with her and would marry her. The husband saw this man and satisfied himself that this was quite untrue, but the patient went to one solicitor after another to try and start proceedings. She became very hostile to her husband, called him a pig and threw his food at him. Her standards in the house deteriorated sharply and she spent her time sitting in her kitchen chain-smoking. She was eventually admitted to Barming Heath Hospital on 20/1/48.

On examination she was apathetic and indifferent to her environment. Her manner was odd, stiff and stilted, and her speech mincing and ultra-refined. There was great thinning of affect and she related her story in a cold, dispassionate, almost bored way. She was incoherent in speech, and sometimes a sentence would tail away as she sank into a state of deep abstraction. She denied that the butcher had declared his love for her in words, but said she had no need of that as she was psychic. She said she knew everything that was going on in her home town without leaving her house. Her case was freely discussed, and she was known as "The ghost of B-". She said that other people could read her thoughts and control her actions by using similar psychic powers to her own. She made no social advances and would not occupy herself.

She showed no change whatever before electro-narcosis was used, except that her care for her

appearance re-asserted itself and she agreed to do a little work in the ward. In particular, there was no change in her account of her relationship with the butcher.

DIAGNOSIS. Physical and serological investigations revealed nothing significant.

There was nothing to suggest an affective psychosis or a condition of organic origin. The main question was whether to regard her as a paranoid schizophrenic or a predominantly paranoid reaction. The thinning of affect, oddity of manner, profundity of abstraction and obvious ideas of passivity led to her being placed in the former category.

#### TREATMENT.

She received 31 treatments by electro-narcosis, three times weekly, starting on 29/4/48. For her first 3 treatments she received atropin and sodium amytal premedication. The electrodes were placed frontally and the average coma-dose was 135 mA. To outward appearance all 3 narcoses were satisfactory. She was not restless, and displayed inspiratory stridor and flexion of the arms.

After the third treatment, however, she said that it felt to her like a bad dream. She felt that she had been turned into an Egyptian mummy. She felt no pain, but could see the nurses standing around her in the same positions as they occupied while the head-band was being clipped on. She felt that there was a

surge of some kind of power flowing through her body from the head down to the feet, and out into the room. She felt no anxiety on her own account, but was in a perpetual terror lest one of the nurses should walk across the foot of the couch in the path of this power. She felt quite sure that anyone who did that would be killed at once. She felt quite helpless to do anything about it, and woke with an urgent sense of anxiety, and a strong desire to avoid a repetition of the experience.

She was promised anaesthesia on future occasions, and rather unexpectedly agreed to continue her course. She was given thiopentone with the desired result, and no further difficulties were experienced. The electrodes continued to be placed frontally, and the average coma-dose remained at 135 mA.

#### RESULT.

The change in her outlook at the end of her course of treatment was peculiar. Her apathy had gone, and her manner was much more supple. She showed enhanced emotional power, and denied having psychic powers. She was not hallucinated, and her ideas of passivity had cleared up entirely. She still maintained, however, that the butcher was in love with her, and still said that her husband had on various occasions behaved very badly to her. The latter point was probably true, in fact it would have been surprising if he had never shown signs of temper and primitive urges.

As regards the butcher, however, she had changed her ground. She stated that he had told her he loved her. Admittedly she could not remember his specific words, but she no longer mentioned her former psychic perceptions. As her whole manner and outlook had changed, and she no longer presented the clinical picture of schizophrenia, the matter seemed to require investigation. The butcher was therefore interviewed, and proved to be a cheerful cock-sparrow of a man, accustomed to calling his customers "My dear", "Darling", or simply "Love". The effect of this on a woman like the patient, in the state she was in before admission to hospital, could easily be imagined. With due tact, therefore, an attempt was made to put the matter to her in its true light. She proved willing to discuss the point, which formerly she had refused to do. Some progress was made, but the nearest she could get to the truth was to admit that he might not have been serious in his intentions, in which case he was to blame for trifling with her affections. She also agreed that there was something to be said for her husband, in view of his protracted faithfulness to her and his genuine attentiveness while she was in hospital. She then said she wished to try life with her husband once more and needed no pressing to change her butcher. She left hospital on 5/8/48, 14 weeks after electro-narcosis was begun. She was considered to have made a social recovery. The fact that she became amenable to psycho-therapy of a fairly superficial type was regarded as of major importance in her case.



DURATION OF ILLNESS.

she had shown signs of frank mental disorder for just over 5 months when electro-narcosis was started.

1). Family History. The father was a semi-skilled mill-worker and the mother had a bad speech defect. One sister died in a mental hospital in 1939 after an acute schizophrenic illness. Apart from her and the patient, there were three sisters and two brothers alive and well, but the whole family had a tendency to stammer.

2). Early History and Development. He was brought up in rather poor surroundings in an industrial area, but his parents always did their best to make the home bright. It was certainly a very pleasant home. He was an average scholar, and then went to work in the same paper mill as his father. He remained there until his breakdown, spent from his period of military service. Most of that he spent in North Africa, but was not in the top physical category. He therefore spent much time on lonely guard duties.

3). Temperament. He was a quiet and rather unsocial man. He was intensely self-conscious, and perhaps to the family himself. At home he was rather moody; he would do odd jobs, but got bored if any difficulty arose and then he would stop. He was a keen gardener, and apparently showed great persistence in his work.

4). Sexual Life. He married in 1939 and in the same year had a daughter, who was a very precocious girl.

Case 51. Male. Admitted 25.2.48. Age 32.

AETIOLOGY AND PSYCHOPATHOLOGY.

1). Family History. The father was a semi-skilled mill-worker and the mother had a bad speech defect. One sister died in a mental hospital in 1939 after an acute schizophrenic illness. Apart from her and the patient, there were three sisters and two brothers alive and well, but the whole family had a tendency to stammer.

2). Early History and Development. He was brought up in rather drab surroundings in an industrial area, but his parents always did their best to make the home bright. It was certainly comfortably furnished and well-kept. He was an average scholar, and then went to work in the same paper mill as his father. He remained there until his breakdown, apart from his period of military service. Most of that he spent in North Africa, but was not in the top physical category. He therefore spent much time on lonely guard duties.

3). Temperament. He was a quiet and rather unsociable man. He was intensely shy and self-conscious, due perhaps to the family hesitancy in speech. At home he was rather moody; he would do odd jobs, but got bored if any difficulty arose and went on to something else. He was, however, a keen gardener, and apparently showed greater persistence out of doors than in.

4). Sexual Life. He married in 1939 and in due time had a daughter, who grew into a rather precocious girl

with a tendency to laugh at her father. His wife was undoubtedly fond of him and was well-meaning and ready to co-operate. She was, however, restless, lively and talkative, and probably got on her husband's nerves, especially when he was becoming mentally ill.

5). Summary of Causative Factors. The presence of well-marked schizoid traits in his personality was probably due to early developmental influences, arising from the family speech trouble. When the patient's sister died in 1939 he was deeply upset, although he kept his feelings to himself. He had a dread of mental illness ever afterwards. The long spells of solitary duty in the army were thoroughly bad for a man of his type, and must be considered as the main precipitating cause of his breakdown. He was never really well after demobilisation, and complaints about his work and his wife were results rather than causes of mental illness.

CLINICAL MANIFESTATIONS. He was noticeably moody on his discharge from the Army in April 1946. Shortly afterwards he had a spell of temporary unemployment, and his wife went to work to supplement his unemployment pay. In her absence the child fell and hurt herself, and the patient blamed his wife bitterly for this, although he was at home at the time. From that time he had periodical "vacant attacks", in which he would sit gazing into space for long periods, with a rather worried expression. Although the spell of unemployment came to an end, the patient's wife remained at work, as she anticipated

further trouble. As time went on he found everything an increasing effort, and neglected his appearance. He complained that his mates at work laughed at him on this account, which, of course, they probably did. He put a notice on his bicycle saying "keep off my tail", and decorated it with coloured rags. One day he pulled up all the rugs in the house and took the gas-cooker to pieces; next day he wept and appeared not to realise what he had done. Eventually psychiatric advice was sought and he came to Barming Heath Hospital as a voluntary patient, although his parents were opposed to this, presumably because of their experience with their daughter..

On examination he showed severe affective failure; he was ~~ind~~ifferent to his appearance and environment, and was sunk in apathy. He found the slightest activity an intolerable effort. His manner was odd and stilted, and when he thought himself unobserved he was noticed to whisper to himself. He never admitted to hallucinations, however. His thought content was vague, and his planning quite unrealistic. He thought that a fortnight's work in his garden would "put him right", although he had had the chance to do that, but spent the time moping indoors. He said he believed other people were laughing about him and discussing his affairs in a disparaging way. His ideas were vague and ill-defined, and thought-blocking was prominent, accompanied by a puzzled, far-away look.

During his first week or two in hospital he showed



a little spontaneous improvement, which, however, receded in the ensuing weeks. When electro-narcosis was started there was little change in his condition compared with that on admission.

DIAGNOSIS. Important physical factors were excluded by clinical and serological examination. The only alternative to schizophrenia requiring consideration was the depressive aspect of an affective psychosis. His emotional reaction was not depressive, and there was no self-depreciation, ideas of guilt or unworthiness, or other content of a depressive type. The predominance of affective failure and loss of energy, and the absence of pathological content led to the conclusion that he was of the simple type.

TREATMENT. He was given sixteen treatments by electro-narcosis starting on 14.5.48. On the first occasion he was given sodium amytal and atropin premedication only. The coma-dose was 130 mA and the Narcosis apparently satisfactory, but afterwards he was found to have torn a muscle in the dorsum of the left foot. It is worth mentioning that the glissando technique was used. The second treatment could not be given until six days later, and thiopentone premedication was used. The electrodes were placed frontally and a coma-dose of 125 mA used. The narcosis was satisfactory, so other treatments were given with thiopentone premedication, three times weekly. The average coma dose required was 130 mA. No other difficulties were encountered.

RESULT. By the end of his course he was much improved. He was much brighter in outlook, brisker in his movements and was working usefully. His manner was more normal and hallucinations could not be detected. He was making efforts at social adaptation and co-operated well with measures aimed at rehabilitation. He showed some affective thinning and vagueness of thought content, and for a long time felt he had not enough confidence to return home. No effort was made to hurry him unduly so he did not leave hospital until 9.10.48, twenty-one weeks after electro-narcosis was begun. He still showed some flattening of affect and slowness in decision, so was classified as a social recovery.

DURATION OF ILLNESS. The history clearly shows that he had been ill since April 1946, two years and one month before electro-narcosis was started.

Personality. Although sensitive and inclined to be a mother's boy, he was sociable and fond of outdoor sport and dancing. He was described as having a "happy temperament" until he went overseas.

Category 2. No 13.

Case 52. Male. Admitted 26.9.47. Age 31.

AETIOLOGY AND PSYCHOPATHOLOGY.

1. Family History. There was no family history of mental or nervous disorder. The father was a quiet and gentle person, employed in a clerical capacity; the mother was kindly and sensible. The patient had two sisters, one older and one a twin; both were married and leading ordinary lower middle-class lives.

2. Early History and Development. He was fat baby, subject to bronchitis. In other respects his development was normal, though he was always said to be "sensitive" and very attached to his mother. He attended elementary school, and then the local grammar school. He was an average scholar, but left at 16 without having got matriculation. After leaving school he worked as a clerk for the same firm as his father, until he volunteered for the R.A.F. in September 1940. He was a wireless operator and wireless operator mechanic, and became an L.A.C. For three years he was in the Middle East; during part of that time he was in a very lonely desert outpost with three other men. He found this experience very trying. When he was posted home at the end of 1945 he was seen to be moody, indifferent to his environment and given to sitting about and brooding.

3. Temperament. Although sensitive and inclined to be a mother's boy, he was sociable and fond of outdoor sport and dancing. He was described as having a "happy temperament" until he went overseas.

4. Sexual Life. He always mixed with girls in a normal social fashion. He had one particular girl friend just before the war, and another during the early part of his R.A.F. service, but both affairs petered out. He never showed any serious disposition to marry.

5. Summary of Causative Factors. The total picture is of a rather colourless, negative personality, unduly dependent on the parents. As long as he received their support he was apparently capable of adaptation in a rather immature way, but the conditions of his war service precipitated a mental illness. Hereditary and constitutional factors appear to be absent; his twin sister was successfully married. As the only boy in the family he was probably unduly spoiled and cossetted.

CLINICAL MANIFESTATIONS. In February, 1946 he was admitted to the military wing of a mental hospital, which could unfortunately not produce any medical records. He was apparently moody, apathetic and self-absorbed, and made many bizarre hypochondriacal complaints. In the course of 13 months he improved considerably, without either E.C.T. or insulin shock. In June 1947, he was discharged from the R.A.F. as "ceasing to fulfil R.A.F. physical requirements, but fit for employment in civil life". In fact, however, his old employers refused to re-instate him on medical grounds. Their medical officer advised him to go to a rehabilitation centre, but he could not afford this and applied to the appropriate tribunal for re-instatement in his old job. He would not let his father or the R.A.F. association handle his



case, and himself failed to appear on the day of the hearing. He then worked in a desultory way at a very light clerical job for two months, during which time he became increasingly moody and indifferent to his surroundings. He would not get up in the mornings and refused to play tennis, as he said the club secretary's wife used to sneer at him. He became irritable with his father and accused him of deliberately making noises with his dentures during meals in order to be annoying. He then accused his father of playing influences on his mind and so controlling his behaviour. He became impossible to manage at home, and was admitted to Barming Heath Hospital under certificate.

He was then dull, solitary and indifferent to his surroundings. He grinned and grimaced for no apparent reason, and had frequent outbursts of senseless laughter. He showed severe emotional flattening, with a residue of suspicion, evasiveness and resentment. He said his father controlled him by "signs" and exercised a curious effect on his breathing. He admitted hearing voices, but maintained that what then said to him was of no significance. He had hypochondriacal ideas about having syphilis of the stomach. At first he was incapable of useful work, but later made himself quite useful on the hospital farm.

He showed little change before the start of electro-narcosis, except that his pre-occupation with hallucinations grew less and he lost his hypochondriacal ideas to some extent. His ideas of passivity

remained, and came to include other people as well as his father.

DIAGNOSIS. Physical factors were excluded by clinical and serological investigations. There could be little doubt of the diagnosis of schizopremia when electro-narcosis was begun. The only possible alternative was the depressive phase of an affective psychosis; he showed, however, no genuine depression and no ideas of guilt, unworthiness or inadequacy. He was regarded as predominantly paranoid in sub-type, as his delusional ideas about his father were more persistent than his preoccupation with hallucinatory experience.

TREATMENT. He was given 29 Electro-narcosis treatments three times a week starting on 14.5.48. For his first two treatments he had sodium amytal and atropin pre-medication only. His second treatment was restless, and had to be stopped after six minutes, so on subsequent occasions he was given thiopentone. The electrodes were placed frontally and the average coma-dose was 150 MA. No other untoward events occurred.

RESULT. During the course of treatment he steadily became brisker and more interested in his surroundings. The quality of his work improved, and by the end of his course of Electro-narcosis he had lost his ideas of passivity and was no longer hallucinated. His emotional flattening grew less pronounced during the period

following treatment and he began to take an interest in social activities. In November 1948, his relatives expressed themselves as very pleased with his progress. He left hospital on 3.12.48. He still showed affective thinning, stiffness of manner and vagueness of thought content, but he showed persistence and concentration at work in the grounds, and was more sociable than at any time during his stay in hospital. 28 weeks elapsed between the start of electro-narcosis and his discharge from hospital. He was regarded as having made a social recovery.

DURATION OF ILLNESS. The time to be assigned to this depended on whether he could be regarded as having made a social recovery at the time he left the military mental hospital. The opinion of his firm's doctor, his behaviour about the tribunal, and his conduct at home all suggested that he had not. His illness was therefore regarded as continuous from the end of 1945; the duration was taken as two years and six months.

Intellect. During the war he did research work for the Admiralty, while not in mental hospital.

Temperament. In his early years he was a normal boy,

who mixed easily and made friends. He played games

relatively well, but as he grew older, took to more solitary

pursuits like stamp collecting and bird-watching. He

always had a streak of secretiveness, and used, for

instance to go away on holidays without giving any

notice to his family.

Personal life. He had three love affairs, but none

of them was very serious.

CASE 56. Male. Admitted 11.7.47. Age 44.

AETIOLOGY AND PSYCHOPATHOLOGY.

1) Family History. The father was an elderly, self-educated but intelligent man, who said the patient had been a great disappointment to him. When the son was admitted to Barming Heath the father said he could cope with him no longer. The mother was extremely deaf and retiring and converse with her was almost impossible. A maternal grandmother was admitted to a mental hospital when seventy-two years old, but had shown no abnormality earlier in life.

2) Early History and Development. His early development was normal. He won a scholarship to Christ's Hospital, and from there another to Cambridge, where he got his M.Sc. degree in 1926. He then got a scientific research job in metallurgy, followed by another connected with television. His contributions in the latter field were apparently very important. From 1934 onwards his work was broken up by periods of mental illness, but while active his efforts were good, and sometimes brilliant. During the war he did research work for the admiralty, while not in mental hospitals.

3) Temperament. In his early years he was a normal boy, who mixed easily and made friends. He played games tolerably well, but as he grew older, took to more solitary pursuits like stamp collecting and bird-watching. He always had a streak of secretiveness, and used, for instance to go away on holidays without giving any notice to his family.

4) Sexual Life. He had three love affairs, but none of them was very serious.



5) Summary of Causative Factors. In default of any exogenous or clear-cut developmental factors, his illness was presumably endogenous. Schizoid character traits were clearly developing as far back as adolescence.

CLINICAL MANIFESTATIONS. His first mental illness occurred in 1934. From November of that year until March 1935 he was in a private mental hospital. He was then odd in manner, vividly hallucinated and erratic in behaviour. He then resumed work until January 1936, when he was found shut in a 'phone box, saying he was protecting himself from gas. He was in another mental hospital for seven months and was diagnosed as a case of paranoid schizophrenia. In 1941 he was again certified and was in yet another mental hospital until July 1946. The diagnosis of paranoid schizophrenia was confirmed.

Until November 1946 he was apparently well and able to work, though in a rather humbler capacity than before. He then broke down again, returned to hospital for two months as a voluntary patient, and went home once more. He was far from well; he said there was a murderer in the house and believed his food was poisoned. He used to wander about the house at night, banging doors. On several occasions he wandered off without saying where he was going, and was once away for three nights without money, or an overcoat during severe weather. Just before his admission to Barming Heath Hospital, he went to his parents' room at 3.0 a.m, shouting and threatening violence.

After admission he was aloof, solitary, indifferent to his environment and devoid of interest in social opportunities. He showed serious emotional failure and was quite indifferent to his situation. He was odd in manner, pulled strange faces, and maintained curious poses for considerable periods. He said that for many years his parents had persecuted him and prevented him from getting jobs by spreading scandal about him. He said that he was sure murder had been committed at his home, and from time to time poison gas had been let loose. His speech was disconnected and at times incoherent, and his ideas were vague and lacking in clarity and precision. He believed his parents could influence his mind from a distance and control his actions. He showed little change before electro-narcosis was started.

DIAGNOSIS. This was not in doubt when electro-narcosis was started. The shallow affect, mannerisms and vague thought content indicated schizophrenia, rather than a predominantly paranoid state.

TREATMENT. He was given twenty-seven electro-narcosis treatments, three times weekly starting on 14.5.48. For his first three treatments he received atropin and sodium amytal premedication. The electrodes were placed frontally and the average coma-dose was 150mA. After the third treatment he complained of having felt a burning hot sensation at the beginning of the treatment, so on subsequent occasions he was given thiopentone pre-medication. The electrodes were

placed frontally and the coma-dose averaged 150 mA. No further trouble was encountered.

RESULT. He improved slowly and steadily throughout his course. He was much more alert and interested in his environment, and showed increased power of emotional response when his course was over. His manner was easier and he dismissed his former delusions as absurd. He was beginning to make social contacts and was working usefully in the occupation department. This degree of improvement was maintained, and he left hospital on 2.9.48, sixteen weeks after electro-narcosis was begun. He showed some affective thinning and was clearly not up to research physics, so was regarded as a social recovery.

DURATION OF ILLNESS. He had been ill for one year and six months when electro-narcosis was begun.

CASE 61. Female. Admitted 26.4.48. Age 32.

AETIOLOGY AND PSYCHOPATHOLOGY.

- 1). Family History. The father was a domineering, difficult man, who had many spells of unemployment owing to his inability to get on with his superiors. The patient was antipathetic to him, but fond of her mother. The family consisted of nine children, the patient being the eldest. There was no history of mental or nervous disorder.
- 2). Early History and Development. She was brought up in a working class flat in Battersea. Conditions were hard owing to her father's frequent periods of unemployment. The patient won a scholarship to the Secondary School, but could not use it, as she had to earn for the family. She sacrificed her ambition to train as a pharmacist. She did well in various clerical jobs, including one at the B.B.C. records office, where she met her husband. She continued working after marriage. After the war she had a short rest. While waiting for a vacancy to train as an infants' teacher, she worked happily as an untrained teacher in a local school.
- 3). Temperament. She was a good mixer, had many friends and was good company. She was inclined to develop enthusiasms, throw herself into the interest of the moment and talk about it at considerable length. She was somewhat domineering, took her responsibilities seriously and was inclined to reproach herself unduly when things



wrong. She was therefore cyclothyme rather than schizoid in type.

4). Sexual Life. From an early age she suffered from irregular menstruation and dysmenorrhoea. She married a rather quiet, submissive, dull man who failed to satisfy her sexually. She confided in a friend that he was undersexed and did not want children, although she did. She had two miscarriages, the second occurring in September 1947. On this occasion she became pregnant because she abandoned contraceptive precautions without telling her husband; she felt that the miscarriage was a judgement on her for this.

5). Summary of Causative Factors. The only obvious precipitating factor was the marital disharmony, in which the miscarriage of September 1947 was probably significant. Her reaction to this was undoubtedly morbid, perhaps because the frustration of her desire to have a child repeated the theme of childhood and adolescence, of sacrifice of her desires for the sake of the family. For two years before admission to hospital she suffered from indigestion and sore throats. It is difficult to know whether to regard these as causal factors in her breakdown or as manifestations of her reaction to a distressing situation.

CLINICAL MANIFESTATIONS. The onset in her case was probably insidious, as she had been worried about her health for some time. Signs of serious abnormality appeared suddenly in March 1948; she became infatuated

with a teacher of gardening and told her husband. She wrote this man a note, signed only with an initial, making an appointment to meet him in London. When he did not turn up, she said that he must have committed suicide and she ought to do the same. The husband soon found out that the teacher of gardening was quite unaware of the patient's infatuation. At the suggestion of a friend, the Presbyterian minister was then consulted, as the patient maintained that the Devil was within her. After unburdening herself she appeared much better for a day or two. Then, on a railway journey, she began playing with the lock of the carriage door in a way that scared her husband. She then told a friend a strange tale of a man breaking into her house to tamper with some papers; this man was none other than the Devil. She then took to praying and singing hymns in the garden, and was admitted to hospital after making an apparently determined attempt to throw herself out of a window.

In the period following admission she showed little interest in her environment, and spent much time in a rapt, trance-like state. Her manner was stiff and peculiar and she was often impulsive in an apparently aimless way. She showed evident affective thinning with a predominant tone of suspicion and resentment. Her thought content was delusional with a bizarre element. Before coming to hospital she heard "silent footsteps" ascending the stairs. She followed, but before she could catch her visitant, he switched off the radio and

disappeared. She said she often saw a vision of a shining figure, which made her want to rush about wildly. She was frequently perplexed, and showed obvious blocking of thought. She was convinced that she was constantly influenced by the thought of others, and she longed to get away into the country to be free from this experience. She had a curious idea that she could only eat food given her by certain people; if she were to take it from others, something dreadful would happen.

DIAGNOSIS. Physical factors were eliminated by clinical and serological examination. The possibility of an affective psychosis was not so easy to rule out. There were obvious ideas of guilt and unworthiness in the early stages of her illness, and she was said to have attempted suicide. The phase of excitement and hymn-singing in the garden might have been manic. Careful observation, however, left no serious doubt about the schizophrenic nature of her illness. She showed thinning of affect without real depression. Her thought processes were blocked, not retarded, and were dominated by complexes among which the Jungian theme of the "Ghostly Lover" was easily discerned. The element of the bizarre and the ideas of passivity were also characteristic.

TREATMENT. She had a course of sixteen treatments by electro-narcosis, three times a week, starting on 15.6.48, with premedication by atropin and sodium amytal. The electrodes were placed frontally, No unusual or untoward

phenomena were noted. The average coma-dose was 130 mA.

RESULT. During her course she improved slowly and steadily. After sixteen treatments she had a phase of confusion and perplexity, with indifference to her environment. This cleared up in five days; she said that she had been "going far away to all sorts of places in a private world of her own".

After this her improvement was rapid. Her thought disorder cleared up, and she showed increased emotional power. She became interested in social activities and employed herself usefully. On 7.10.48, sixteen weeks after treatment was started, she left hospital. Although free from psychotic symptoms, she showed some stiffness of manner, affective thinning and vagueness of thought content. She was therefore regarded as a social recovery.

DURATION OF ILLNESS. This was taken from the onset of acute symptoms; and reckoned to be just over three months at the time treatment was started.



CASE 63. Female. Admitted 15.3.48. Age 19.

AETIOLOGY AND PSYCHOPATHOLOGY.

1). Family History. The patient's father and mother separated when the patient was two years old. The father was said to be so bad tempered that he was impossible to live with. When the patient was three, he abducted her from her mother's home and lodged her with an old woman in Leeds. The mother went to court and secured the return of the child and an injunction preventing the father from seeing his daughter again. He then disappeared and contributed nothing to the support of mother or daughter. The patient's mother was neither strong nor very intelligent, but supported herself and the girl by domestic work. There was no family history of mental disorder. The patient was an only child.

2). Early History and Development. The patient's infancy was normal. Her mother had two posts only; the first was in a large country rectory where the girl had a very happy and free childhood. Her mother's employers were very fond of her. In the second position, mother and daughter had quarters in the house quite separate from the employers, so in spite of financial strain, the conditions in which the patient grew up were much more stable and satisfactory than might have been expected. She was bright at school, won a scholarship to the local technical school and then became a **cashier** at a local draper's shop. She hated the work, and after a year got a job as receptionist to a dental

firm. This she enjoyed and got on well with another receptionist and a nurse employed by the firm. Her work was well spoken of by her employers.

3). Temperament. Until about two years before her admission to hospital she was a bright, cheerful youngster with plenty of friends. She was a member of a youth club, and fond of cycling, tennis and outdoor activities. For two years, however, she had grown more solitary and had stopped going to the pictures or dances. In spite of a Church of England upbringing, she became an ardent member of a local evangelical mission and spent her spare time reading the Bible.

4). Sexual Life. She mixed quite freely and cheerfully with boys, but her relationships were quite superficial. She had no special boy friends.

5). Summary of Causative Factors. There may have been a hereditary constitutional element, but the most potent factor was presumably the breaking up of her home. She grew up without a father in straitened circumstances. Before she broke down she was very unhappy at home, and found it very difficult to get on with her mother. She was torn between a sense of loyalty and gratitude, on the one hand, and a realistic appraisal of the difficulties of life at home, on the other.

CLINICAL MANIFESTATIONS. She showed a progressive change in character during the two years preceding her breakdown. She lost interest in her outdoor and social activities, and spent her spare time reading the Bible

and attending Evangelical meetings. She became slovenly in her ways and would not get out of bed unless her mother forced her. She neglected her appearance, but managed to continue at work until shortly before admission to hospital, but was increasingly morose and inefficient.

About a week before admission she was more than usually angry about being roused in the morning. She would not go to work but spent the day at her aunt's house talking in a rambling way. The following day she went to work, but came home saying her lungs were full of chloroform. Her behaviour became very bizarre; she spent a week-end turning out her drawers and sprinkling water over newspapers. The doctor was sent for and her admission to hospital arranged.

On examination she was indifferent to her environment and showed severe failure of affective power. She grinned and made funny faces for no obvious reason, and showed serious incongruity between her emotional reactions and the current of her spoken thought. Her speech was inconsequent and incoherent. She said that other people were wearing a sort of fancy dress and laughing at her, reading her thoughts and influencing her mind in strange ways. She said she constantly heard voices giving her advice, mostly in the form of religious counsel. She made no attempt at social intercourse and was incapable of useful work. During April 1948 she had ten E.C.T. reactions without benefit, and showed no further change until electro-narcosis was used.

DIAGNOSIS. Physical and serological examinations revealed nothing significant. There was no clouding of consciousness, defect of memory or demonstrable failure of intellectual grasp to suggest a delirium of organic origin. Her emotional reaction and mental content were not depressive, but the clinical picture was characteristic of schizophrenia. The inertia, preoccupation with hallucinations, mannerisms and bizarre thought content were characteristic of the hebephrenic type.

TREATMENT. She was given sixteen treatments by electro-narcosis, three times weekly, starting on 15.6.48. For the first two she was given sodium amytal and atropin premedication, but subsequently received thiopentone. The electrodes were placed frontally and the average coma-dose was 140 mA. No difficulties were encountered.

RESULT. She improved slowly and steadily while having electro-narcosis. When her course was finished she was no longer hallucinated and her thought disorder had cleared up. She was making social advances and was working usefully. She was therefore within the orbit of rehabilitation, although still showing serious affective flattening, oddity of manner and a tendency to sit and stare into space in a vacant way. She continued to improve slowly but steadily apart from a curious episode five weeks after treatment was finished, when for one day she was confused, disoriented for time and unable to remember items imparted to her five minutes previously.



She appeared dazed and puzzled. This state disappeared as quickly as it had come on, and her progress was resumed. She left hospital on 14.10.48, seventeen weeks after electro-narcosis was begun. Her habit of "vacancy" and her mannerisms had gone, but her affect was thin and shallow, so she was regarded as a social recovery.

DURATION OF ILLNESS. The history indicated that her character change and slow deterioration began two years before admission. She had therefore been ill for two years and three months when electro-narcosis was begun.

Case 66. Male. Admitted 20.5.48. Age 33.

AETIOLOGY AND PSYCHOPATHOLOGY.

1). Family History. The main informant was the patient's wife, an intelligent and well-educated young woman, the daughter of an eminent professional man. The father was a kindly, hard-working estate-agent who died in a mental home in his late sixties of senile decay. The mother was a domineering, dogmatic and opinionated little Welshwoman, who was never known to admit herself in the wrong. She lavished all her adoration on the patient's brother. The family consisted of two girls and two boys, including the patient, who was the youngest. The elder brother was described as a keen, hard businessman. One sister was a trained nurse, and Matron of a Welfare Home; she was described by the informant as a "hard-bitten hag". The other sister was a gentle unsophisticated creature, who clung to her mother and emigrated when she died in 1945. Apart from the father's senile psychosis, there was no history of nervous or mental disorder.

2). Early History and Development. He was an acutely shy child who nevertheless showed an early dislike of his elder brother. He got on quite well at preparatory and public schools, and made a number of friends whom he was allowed to entertain at home. He passed his London B. Sc. in engineering without difficulty, and showed great promise as an aero-engineer. He entered the Fleet Air Arm in 1942, was shortly

afterwards posted to Trinidad and remained there till 1945. Soon after coming home he first became mentally ill.

3). Temperament. He was a shy, very kindly person, capable of being affectionate and demonstrative. He was unselfish and fond of home life, and was religious in an unobtrusive way. He was thoughtful, was deliberate and accurate in his statements but sound in his judgements. In Trinidad, he was liked by his brother officers and was popular with his men, of whom he was very considerate.

4). Sexual Life. He married at the age of 25 and had one daughter of six, at the time of his admission to Barming Heath. He knew his wife for nine years before they were married; afterwards they were little together, owing to his absence abroad and subsequent mental illness. His wife thought that the moral laxity of his colleagues in Trinidad, and their tales about their own wives, shocked him considerably and formed the basis of his later delusions. The sexual colouring of his thought when mentally ill was certainly very pronounced.

5). Summary of Causative Factors. The family seem to have run somewhat to extremes and the patient showed some schizoid tendencies from an early age. These were, no doubt, aggravated by his mother's obvious preference for the elder brother. The patient's own dislike of him would no doubt make him recoil still further from behaviour smacking of successful and somewhat aggressive extraversion. The part played by the

isolation of Trinidad was recognised by the Navy, in the shape of a 40% disability pension. He came home in a physically run-down condition, having had malaria, quinsy and measles, to find that his mother had just died. He was upset at being deranked prior to demobilisation, and annoyed at various changes of post.

CLINICAL MANIFESTATIONS. Towards the end 1945 he began telephoning his wife to ask what men she had in the house, and accused her of infidelity with various men whom he named. He was admitted to a Naval mental hospital, diagnosed as suffering from paranoid schizophrenia, and given E.C.T. Apparently he derived no permanent benefit from this, as eighteen months or so later he was transferred to another hospital where he was given insulin shock. He did very well and went home in August 1947, being discharged from the Navy at the same time. His wife said that even at this time he was suspicious and secretive, but he was able to resume work as an engineer lecturer at a technical college, where he gave the impression of settling down well as an efficient teacher.

Early in March 1948 he broke down again. He was in lodgings, as his work was some distance from his home, but left because he believed his landlady was co-habiting with her fourteen-year-old son. At home, in the Easter holidays, he made sexual advances to the foreign maid. When his wife remonstrated, he discharged the girl without any thought about how she would get



home. He then accused his wife of homosexual relations with their daughter. He began to watch his wife, apparently with the idea of catching her red-handed, and was probably unfaithful himself. He was in due time certified, and admitted to Barming Heath on 20.5.48.

He showed considerable flattening of affect, was slow in his thought processes, and grinned at times in a fatuous way. He said, with emphasis, that his wife had been periodically unfaithful to him for several years. He said his belief was quite unshaken, although he admitted that he had not much evidence to go on. He showed little real resentment; at times there was incongruity between his emotional reactions and the current of spoken thought. His manner was odd and he failed to react to his environment as was expected, but was curiously passive and inert, even in provoking situations. He showed no change before treatment was begun.

DIAGNOSIS. Organic factors were excluded by clinical and serological investigation. The predominance of thought disorder and absence of elation or depression ruled out an affective psychosis. The only question to decide was whether to regard him as suffering from a paranoid state, or as a paranoid schizophrenic. While realising that no hard and fast line could be drawn between the two categories, the latter was chosen owing to affective flattening and incongruity, the presence of mannerisms, and the lack of any positive response to his environment or his delusions.

TREATMENT. He was given thirty electro-narcosis treatments, three times a week, starting on 14.6.48, with thiopentone and atropin premedication. The electrodes were placed frontally and the average coma dose was 155 mA. He was sensitive to thiopentone; on two occasions he became too deeply anaesthetised and caused momentary anxiety.

RESULT. During the course of his treatment, his delusions steadily receded. At no time, after treatment was over, did he voice them again. He said that he was quite wrong in saying his wife had been unfaithful, and that he had done so owing to some deep-seated trouble in himself. He described the change in his thought as being quite different to that which took place following insulin shock. He said that he then retained his ideas about his wife being unfaithful, but felt "slap-happy" about them. Another psychiatrist took the view that he was mere "covering" his delusions, though admittedly with success. His wife readily accepted that opinion and decided to have nothing more to do with him. The patient took this well - too well - but showed no return of his delusions. He left hospital on 7.10.48, eighteen weeks after electro-narcosis was started. As he still showed emotional thinning, fatuity of manner, and slowness of thought, he was regarded as a social recovery. The difference of opinion about his case would have been enough by itself to prevent him being placed in the category of complete remissions.

DURATION OF ILLNESS. In spite of his own statement about retaining his delusions after insulin treatment, and his wife's observation that he **was** still suspicious, he must be regarded as having made a social recovery after insulin. The duration of the attack for which he received electro-narcosis was therefore just over three months when treatment was started.

is well known to the patient, especially in view of his age, while the father was a mild, gentle creature of self-indulgent habits. A paternal uncle died at 35, after fourteen years of increasing paralysis. At the time the condition was said to be hysterical, but was eventually established as organic. The maternal great-grandmother had a depressive illness, and the mother herself had a long period of "free spiritism" after the war. The patient was an only child.

Early History and Development. She was rather a small child. She used to go everywhere with her mother, and behaved extremely well. She disliked, however, being dressed in pretty frocks and preferred boyish clothes. The home background was conventional, ultra-respectable and low-church. The garden was the envy of the neighborhood and contained a lily-pond, tanks of goldfish and numerous statues. At school the patient did well. At fourteen she went to the local grammar school as a fee-paying pupil. At eighteen she went to a commercial school and trained as a shorthand typist. After several miserable jobs she obtained a post at the Bank of England, which she held at the time of her illness. She worked extremely hard and was well liked.

Case 70. Female. Admitted 9.7.48. Age 26.

AETIOLOGY AND PSYCHOPATHOLOGY.

1. Family History. The father and mother were alive and well. They were typical members of the lower middle-class. The mother was rather possessive and domineering towards the patient, especially in view of her age, while the father was a mild, gentle creature of self-effacing habits. A paternal uncle died at 24, after fourteen years of increasing paralysis. At one time the condition was said to be hysterical, but was eventually established as organic. The maternal great-grandmother had a depressive illness, and the mother herself had a long period of "low spirits" after the war. The patient was an only child.
2. Early History and Development. She was rather a model child. She used to go everywhere with her mother and behaved extremely well. She disliked, however, being dressed in pretty frocks and preferred boyish clothes. The home background was conventional, ultra-respectable and low church. The garden was the envy of the neighbourhood and contained a lily-pond, tanks of goldfish and numerous statuettes. At school the patient did well. At fourteen she went to the local grammar school as a fee-paying pupil. At eighteen she went to a commercial school and trained as a shorthand-typist. After several secretarial jobs she obtained a post at the Bank of England, which she held at the time of her illness. She worked extremely hard and was well thought



of by her employees.

2. Temperament. Until she went to the Bank of England, three years before her admission to hospital, she was an active, outdoor girl whose pursuits were riding, hiking, tennis and skating. She was sociable in a rather superficial way and certainly showed no interest in domestic activities. On going to the Bank she dropped her former activities, and became interested in music and ballet, which she discussed in an earnest and rather tedious way. She remained interested in social activities at her church and for a time was much exercised in mind as to whether she should become a missionary.

4. Sexual Life. From early days she preferred the company of boys to girls, but there appears to have been nothing in the way of sexual attraction in this. She wished to be a boy amongst boys, to dress like them and play with them on level terms. She grew into a pretty and attractive girl, so this form of relationship became impossible. She froze all sexual advances almost before they were made, but did her best to mix with men on level terms in her intellectual pursuits. She was meticulously neat in her dress, but favoured tailor-mades of rather masculine cut; she always dressed to resemble men, never to attract them, though she could very easily have done so.

5. Summary of Causative Factors. There was probably a hereditary predisposing element in her case. Her sexual attitude showed a profound failure of adaptation

to reality operative from an early age. Although intelligent and quite a good talker, she was curiously immature both physically and emotionally. She gave the impression of a girl of seventeen, instead of twenty-six, who had learned the current jargon about music, ballet and the arts without really caring twopence for them. Her breakdown therefore appeared to spring from a deep-rooted inability to adapt to reality inherent in her personality structure.

CLINICAL MANIFESTATIONS. The parents explained her breakdown as due to overwork and the unfortunate effect of a fellow-employee at the bank. This woman was in her late thirties, and had a history of an unhappy home life and possible of mental breakdown. She had a strong interest in spiritualism and claimed to be psychic. The patient came under her influence after deciding, rather regretfully, that the mission-field was not for her. This so-called medium persuaded the girl that she also was psychic.

For about three months before her admission to hospital the patient was moody and pre-occupied. She only answered questions after a long interval, and took to reading her bible in the train and leaving it on her desk at the Bank. She made rather petulant claims to be psychic, and grew irritable with her people. One night, without warning, she went round to a friend's house and said she was afraid to go home. The friend's mother finally persuaded her to go, and took her home

herself. Shortly afterwards, she was brought home from work in a distressed state. She demanded to be left alone in a corner of the room, saying that God would then tell her what to do. An attempt was made to give her a sedative, but she fought and screamed, saying that she was being poisoned. Soon after that she was admitted to hospital.

She was morbidly preoccupied and indifferent to her appearance and surroundings. She made strange faces, and spent much time in strange attitudes with a rapt, intent expression on her face. Her affect was thin and shallow, and there was much incongruity between her emotional responses and the current of spoken thought. She said she could hear spirit voices and was controlled by the spirit world. She made no effort at making social contacts, and was incapable of work. She changed but little before electro-narcosis was started.

DIAGNOSIS. Important physical factors were excluded by clinical and serological investigations. The clinical picture was characteristic of schizophrenia of the hebephrenic type. There was no clouding of consciousness, memory defect or failure of intellectual grasp to suggest a toxic-exhaustive psychosis. She showed no depressive features in her emotional reaction or mental content.

TREATMENT. She was given 29 treatments by electro-narcosis, three times weekly, starting on 27.7.48. She received thiopentone and atropin premedication through-

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out. For the first 27 treatments the electrodes were placed frontally, and the average coma-dose was 130 MA. During the last 2 treatments the electrodes were placed frontally and moved temporally during treatment. The average coma-dose was 110 MA. No difficulties were encountered.

RESULT. She improved slowly and steadily during her course of treatment, and at the end was much brisker, more alert and more capable of emotional response. Her hallucinations and ideas of passivity had cleared up and she made no claim to be psychic or to have super-normal powers of any kind. Her affect was shallow and her manner stiff; she was, moreover, uncertain whether she had been the subject of a genuine spiritual experience or not.

During the month which followed she worked well, and made use of social opportunities. She became more normal in manner and spontaneous in her reactions. She still maintained, in a theoretical sense, that spiritualistic phenomena could occur, but made no personal claims. Her discharge was ordered rather prematurely by her relatives, fourteen weeks after the beginning of electro-narcosis. As she was not symptom free, she was regarded as a social recovery.

DURATION OF ILLNESS. This was about four months at the time electro-narcosis was started.



Case 71. Female. Admitted 9.6.48. Age 23.

AETIOLOGY AND PSYCHOPATHOLOGY.

1. Family History. The patient's father was a farmer in a small way in Ireland. He was in a mental hospital for a short time in 1926, but details of his illness could not be obtained. He died of heart failure while in his early fifties in 1946. The mother was alive and well. There were eight children, of whom the patient was the fourth. The others were all well and normal. One was a nun in a nursing order in Manchester.

2. Early History and Development. Her infancy and childhood on the Irish farm were quite normal. She was bright at school and quite enjoyed the farm work which followed, but from an early age wanted to be a nun. She came to England and became a postulant for the nursing order in Manchester. Her younger sister was already there, and later took her vows, but the patient had frequent turns of stomach trouble and after a year was rejected. She was very upset about this, but joined another sister in Kent as domestic at a Catholic presbytery. She was working there at the time of her breakdown.

3. Temperament. She was described as a shy, quiet girl, who had few friends and no interests apart from her absorbing passion for religion. She was easily upset, especially by criticism, and had occasional

outbursts of temper, which usually subsided quickly.

4. Sexual Life. She never showed any interest in boys at all.

5. Summary of Causative Factors. There was presumably a hereditary constitutional element in her illness, and she certainly showed schizoid traits from a very early age. The serious disappointment of her rejection by the nursing order was a powerful precipitating factor. After that event, her work was undoubtedly rather heavy.

CLINICAL MANIFESTATIONS. In October 1947 she began to be lackadaisical and would not go out in her spare time. She felt ashamed and dejected at the prospect of going home with her ambition to become a nun unfulfilled. Her appetite became erratic, and her energy and interest in her work progressively diminished. Early in June her speech became rambling and disconnected. Her abnormal bearing was noticed by the senior priest four days before admission to hospital. After that she became progressively more restless, noisy and excitable by night as well as by day.

After admission she was restless, noisy and impulsive in a meaningless way. Her speech was inconsequent and disconnected, often being mere neologistic gibberish. She was much given to grimacing and silly laughter, and showed a curious lack of emotional power or warmth, in spite of her restless,

uncontrolled behaviour. She said she was Saint Theresa and all the angels in heaven, and constantly heard the voices of saints and blessed spirits. She believed her mind was played on by outside influences, and that her conduct could be directly controlled by the minds of others. She showed no real improvement before being given Electro-narcosis.

DIAGNOSIS. Physical and serological examinations revealed nothing significant. In her quieter moments she was not confused, disoriented or amnesic, so delirium of organic origin was excluded. She never showed elation or emotional warmth, nor was she accelerated. Her speech was disconnected, but never showed the characteristics of flight of ideas. The possibility of mania was therefore discarded. Owing to her excitement there seemed to be some doubt whether she should be regarded as a katatonic or a hebephrenic. She never showed any phases of stupor or resistiveness, but was manneristic and preoccupied with hallucinations. Her mental content was bizarre and she showed considerable impulsiveness. She was, therefore, classified as a hebephrenic.

TREATMENT. She had 29 treatments by electro-narcosis, three times weekly, starting on 27.7.48. For the first three treatments she had sodium amytal and atropin pre-medication only. On subsequent occasions she was given thiopentone. On all occasions except the last

two, the electrodes were placed frontally, and the average coma dose was 130 MA. Her last two treatments were started with the electrodes forward, but they were moved temporally during treatment. The average coma dose was 110 MA. On 9 occasions she was noted as having an unduly light narcosis; on three of these treatment was cut short as she was becoming restless. She did not retain any memory of the treatment. No other difficulties were encountered.

RESULT. She did not begin to show any improvement at all until she had had about 15 treatments. Then slow progress was made until the end of her course. By then her excitement had died down. She showed a thin facile affect, and a considerable tendency to silly laughter and facial contortions. She no longer claimed to be St. Theresa and was not hallucinated, but her speech was inconsequent and her thought content vague and idiosyncratic. She kept herself clean and tidy without constant supervision and employed herself usefully. She was beginning to make social contacts but displayed little drive or initiative. She was, however, co-operative to measures of rehabilitation and continued to improve after treatment was stopped. She left hospital on 15.12.48, 20 weeks after electro-narcosis was begun. She showed a thin, shallow affect, a vague thought content and a simple manner, so was regarded as a social recovery.



DURATION OF ILLNESS. Taking this from her rejection as a postulant, she had been ill for nine months when electro-narcosis was begun.

1). Family History. The patient's father died suddenly during the war from heart trouble. He was a good husband and father, but overestimated about money. The mother was a funny, middle-aged woman, who was originally valuable and had been through a terrible trial to live with. The family consisted of the patient, an older brother, a younger sister and an adopted cousin slightly younger than the patient, and her very good friend. The maternal grandfather was an alcoholic.

2). Early History and Development. Her infancy was uneventful. She did well at school and won a scholarship to the Technical School. She trained as a shorthand-typist, and worked in London for three years but left because her boss "made passes at her". She got another job locally but lost it after a year when a reduction in staff occurred, and then became shorthand-typist to a large local firm. She was happy there and well thought of by her employers. When she broke down they continued to pay half her salary to her mother.

3). Temperament. She was sensitive and disliked criticism, especially about her appearance. She took a lot of trouble over her dress, but would not go to parties with other girls if she thought them better dressed. On the whole, however, she was sociable, and liked dancing, singing and amateur dramatics. She undertook many social activities in connection with the church.

CASE 72. Female. Admitted 3.7.48. Age 21.

AETIOLOGY AND PSYCHOPATHOLOGY.

- 1). Family History. The patient's father died suddenly during the war from heart trouble. He was a good husband and father, but scatterbrained about money. The mother was a fussy, anxious woman, who was irritatingly voluble and must have been a terrible trial to live with. The family consisted of the patient, an elder brother, a younger sister and an adopted cousin slightly younger than the patient, and her very good friend. The maternal grandfather was an alcoholic.
- 2). Early History and Development. Her infancy was uneventful. She did well at school and won a scholarship to the Technical School. She trained as a shorthand-typist, and worked in London for three years but left because her boss "made passes at her". She got another job locally but lost it after a year when a reduction in staff occurred, and then became shorthand-typist to a large local firm. She was happy there and well thought of by her employers. When she broke down they continued to pay half her salary to her mother.
- 3). Temperament. She was sensitive and disliked criticism, especially about her appearance. She took a lot of trouble over her dress, but would not go to parties with other girls if she thought them better dressed. On the whole, however, she was sociable, and liked dancing, singing and amateur dramatics. She undertook many social activities in connection with the church.

4). Sexual Life. She was not shy in the company of men. About a year before she was in hospital she went about a lot with a major's son. He gave her a good time and encouraged her to drink too much. In the end he tried to seduce her so she gave him up. Later she acquired another boy-friend, duller but more estimable; she admitted a nostalgia for the good times of the past. The mother said she had given her daughter sex-instruction, of which the principal tenet was, "men have their feelings, and you must keep them in their place". The girl herself, admittedly after she had broken down, said that she had not had many love affairs, although she had had a number of opportunities. She said this was because she was pre-occupied with a dream-man so that she never really got to know any real ones. She also admitted having masturbated from time to time.

5). Summary of Causative Factors. There may have been a constitutional hereditary factor, especially as the exagenic precipitating factors were not very powerful. Her mother was a trial and she obviously felt rather flat after breaking with her improper boy-friend, but these could hardly have operated in the absence of predisposition. There were undoubted schizoid and narcissistic traits in her previous personality, so her illness could fairly be presumed to be mainly endogenous.

CLINICAL MANIFESTATIONS. In April 1948 she was noticed to be rather tired and irritable. She would not go out in the evenings and complained that her work was

getting her down. In May she told her mother she had been wanting to kill either herself or somebody else for the past two years, and drank a bottle of Easton's Syrup without ill effect. During the next few weeks she was tearful and off her food. She spent a lot of time lying on her bed and moaning. She said she had been very wicked and on June 7th made a rather futile demonstration at suicide by strangling herself. She then came under psychiatric supervision and was admitted to Barming Heath Hospital on 3.7.48. During the whole three months before her admission she had been very difficult at home. She was hostile to her mother and kicked her at least once. She resented having to pay money for the upkeep of the home, and went round the house shouting that she didn't believe in God, which had its effect in a churchgoing household.

When she was admitted to hospital a history was obtained of a curious episode when she was fourteen. She expressed a conviction that she and her sister were going to die. She had just gone to the Technical School, which she hated. Her father refused to let her stay away and said the nonsense must stop, which it did.

In Hospital she was morbidly preoccupied and indifferent to her surroundings. She was stiff and stilted in manner and showed a thin, colourless affect. She showed considerable tension and morbid rumination on immature fantasy images, mainly with a painful associated feeling tone. She said she felt shut off from other



people and that although she was alive, she did not really feel she was a person. She made a suicidal demonstration soon after admission, by tying a flimsy ribbon round her neck at a time when she could not fail to be observed.

DIAGNOSIS. Clinical and serological examination revealed nothing significant. The problem in her case was whether to regard her as essentially depersonalised, or as a depressive, or a schizophrenic. In favour of depersonalisation there was the history of strained relations with her mother, and the fact that she was more mature intellectually than emotionally. Her symptoms also were related to a period of relaxation after the stimulus of her love affair with the major's son (Shorvon, 1946<sup>\*</sup>). Nevertheless, the question at issue was not so much whether she was depersonalised, as whether that was the essential feature of her case. The possibility of depression was also attractive at first sight. She was described by her relatives as depressed and was said to have been tearful and to have lain moaning on her bed. She made various attempts at suicide and on one occasion said she was wicked. Closer investigation, however, showed that her attempts at suicide were all designed to draw attention to herself. Her complaint of being wicked apparently had the same end, like her remarks about not believing in God. On examination she showed no genuine depression, no real desire to commit suicide, and no shame associated with masturbation. The

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\* Shorvon, H.J., (1946). Proc. R. Soc. Med., 39, 779.

presence of affective thinning, stiffness of manner, pre-occupation with immature fantasy, morbid rumination and thought blocking was held to indicate that her condition was fundamentally schizophrenic. In view of the relative lack of content she was considered to be of the simple type.

TREATMENT. She was given eight treatments by electro-narcosis, three times a week, starting on 31.7.48. She received thiopentone and atropin pre-medication. The electrodes were placed frontally and the average coma-dose was 155 mA. No difficulties were encountered.

RESULT. After her course of treatment she was more alert and interested in her surroundings and showed improved power of emotional response. Her feelings of depersonalisation had cleared up; she was socially active and was undertaking useful work.

She left hospital prematurely on 22.8.48, three weeks after starting electro-narcosis and only five days after finishing. The absence of a period of stabilisation and rehabilitation was unfortunate in her case. Quite by chance, information was received four months after her departure to the effect that she had, in fact gone on to make a complete recovery. When she left Barming Heath, however there was still flattening of affect and oddity of manner, so she was regarded as a social recovery.

DURATION OF ILLNESS. She had been ill for four months when electro-narcosis was begun.

Case 73. Female. Admitted 24.6.48. Age 25.

AETIOLOGY AND PSYCHOPATHOLOGY.

1). Family History. There was no known history of nervous or mental disorder. The parents were kindly, elderly people, much devoted to the patient. The father had just retired from work as a warehouse clerk at the age of sixty-nine, as he was found to have tuberculosis. The mother had recently become crippled by arthritis of the knees. The patient was the youngest of a family of seven, the others all being boys. They were all affectionate in their attitude to her.

2). Early History and Development. She was nervous as a child and would not sleep without a nightlight. She was an average scholar; she left elementary school at fourteen and then remained at home for a time, before learning dressmaking at the local art school. She became extremely effecient and at the age of eighteen took a post as tailoress in her home town. Two years later she changed to another firm and remained with them until her illness. She was extremely conscientious and her employer thought very highly of her.

3). Temperament. She was rather a serious-minded girl, who used to be taken out a lot by her brothers before they married. She seems to have developed tastes of a more mature kind than other people of her own age, and also to have grown up without much social initiative when left to herself. She was rather quiet and had few

friends of her own age, and in particular, few girl friends. Although fond of fun at home and dancing, she took her religion seriously, and was a regular church-goer and communicant.

4). Sexual Life. She had never shown any interest in boys of her own age until a few weeks before her illness. She then made friends with a nice lad of whom her parents approved, and was very excited by the experience. The young man returned her affection and there was no question of anything going wrong with the affair.

5). Summary of Causative Factors. The history gave a picture of a girl brought up in rather sheltered surroundings, stimulated to precocious growth intellectually, but emotionally immature. Although her parents thought her first love had nothing to do with her breakdown, it is at least a reasonable speculation that the awakening of her emotional life presented her with problems which could not be solved by application at work or regular religious observances. She may also have had too much responsibility thrust on her, owing to her parents being in poor health.

CLINICAL MANIFESTATIONS. In March 1948 she began to get tired easily, and wept rather frequently. She began to sleep badly and started behaving in a childish way to her mother. She became talkative and restless, and finally could not be managed at home; she was admitted to Barming Heath Hospital in June 1948.

She was then restless and overactive in an aimless



way, and her habits were faulty and degraded. When approached she was furiously resistive and intensely negativistic. Her speech was disconnected and inconsequent, but there was no acceleration or flight of ideas. Telegrammatic forms of utterance were common and occasionally symbolic expression occurred, for example "I am a pink rose" or "I am a ladder". She showed sudden bursts of excitement, but by and large showed little emotional drive. In her quieter periods she assumed curious attitudes which she maintained for considerable periods of time. At such times she usually had a set, strained expression, from time to time her lips moved, almost as if in prayer. She said she could hear her father's voice projected to her from a distance, usually warning or threatening, but occasionally bringing solace. Her thought content was vague, and she made little effort to communicate it, but she seemed to have bizarre religious ideas, and at times seemed to regard her father's voice as the voice of God. She showed some tendency to alternate between excitement and resistive stupor, but the phases were not clear-cut. She showed little change before electro-narcosis was begun on 24.8.48.

DIAGNOSIS. The presence of important physical factors was excluded by clinical and serological investigations. It was difficult to exclude the possibility of a delirium due to toxins or exhaustion, especially as detailed testing of the sensorium was impossible. An element of toxæmia was probably present on admission, as she had slight pyrexia, a pale face, cracked lips, a furred

tongue, and sordes on the teeth. The form of speech, however, was characteristically schizophrenic, and so was the tendency to trance - like states in curious postures. When considered in relation to her thought disorder and alternating phases of conduct, the fundamentally schizophrenic nature of her illness was evident. She showed no elation, acceleration, distractibility or flight of ideas, so the possibility of mania could be excluded.

TREATMENT. She was given twenty-three treatments by electro-narcosis, three times weekly, starting on 24.8.48. She received premedication by atropin and thiopentone. During her first nine treatments the electrodes were placed frontally and the average coma-dose was 140 mA. During subsequent treatments the electrodes were placed frontally and moved temporally during treatment. The average coma-dose was then 120mA. Inadequate depth of narcosis with restlessness occurred on nine occasions, but she showed no apprehension at any time, nor was there any evidence of retention of memory of the treatment. On one occasion there was weakness and irregularity of the pulse, when a large dose of electricity was used to combat the tendency to restlessness. No other difficulties were encountered.

RESULT. At the end of her course of treatment she was much improved. Her excitement and resistiveness had both cleared up. She was in much better touch with her environment, and was beginning to work and to make social efforts. She was no longer hallucinated, but showed

category 2. No 22.  
thinning of affect, oddity of manner, and a vague, idiosyncratic thought content. During the three weeks which elapsed before her parents prematurely took her home she co-operated well with rehabilitation measures. She showed increasing alertness and emotional power, and improved at work, particularly in concentration and persistence. It was unfortunate that her discharge was ordered too soon. As she had residual symptoms she could only be regarded as a social recovery. She left hospital thirteen weeks after electro-narcosis was begun.

DURATION OF ILLNESS. From the history, this could be fixed at five months at the start of electro-narcosis.

#### CLINICAL MANIFESTATIONS.

He was called up in July 1941. From the first he could not remember or understand what was asked of him, and after 3 weeks he was discharged. In view of these facts he was referred to the psychiatric department of a London teaching hospital. The psychiatrist found him

Category 2. No 22.

CASE 78. Male. Admitted 7/7/48. Age 20.

#### AETIOLOGY AND PSYCHOPATHOLOGY.

1). Family History. He came of a working class family.

His father and mother were alive and well. He was the middle one of three children, the other two being normal and healthy. There was no family history of mental or nervous disorder.

2). Early History and Development. Birth and infancy were normal and he displayed no neurotic traits. At school he was slightly below average and left from the second highest standard. After school he was four years in a cleaning and dyeing works; his work was quite satisfactory.

3). Temperament. From an early age he was said to be solitary, withdrawn and prone to daydreams. His hobbies were playing the piano and going to the pictures.

4). Sexual Life. He showed no interest in girls and never had a girl-friend.

5). Summary of Causative Factors. He showed well-marked schizoid traits from early years, and broke down within three weeks of his induction into the army.

#### CLINICAL MANIFESTATIONS.

He was called up in July 1946. From the first he could not remember or understand what was asked of him, and after 3 weeks he was discharged. In view of these facts he was referred to the psychiatric department of a London teaching hospital. The psychiatrist found him



in an acutely anxious condition, but considered that early schizophrenia could not lightly be excluded owing to his change in personality, and the presence of thought-blocking. He was admitted to a neurosis hospital where he was regarded as a psychopathic personality of the schizoid type. Definite signs of schizophrenia were considered to be absent. He left the hospital in January 1947 in a much improved state and returned to work.

He worked well and appeared quite normal at home until the beginning of July 1948, when he suddenly became overactive and excitable, and said he was involved in rackets with crooks and spies at the dye-works. He was seen again at the London teaching hospital and regarded as a schizophrenic. Immediate admission to Barming Heath Hospital was arranged.

On admission he was wildly excited and overactive. He gesticulated strangely and was continually impulsive in a purposeless way. He contorted his face and showed frequent explosive outbursts of silly laughter. Many of his actions were stereotyped, and he continually repeated meaningless phrases. He could do nothing for himself and required considerable sedation and much nursing care. He frequently shouted into the corners of his room in answer to hallucinatory voices. Later, when he became slightly more coherent, he reiterated ideas of being involved in rackets run by an international crook named Barker. He believed he constantly received wireless messages about the matter

and said his mind was controlled, apparently by the gang. He showed no spontaneous improvement before electro-narcosis was begun.

#### DIAGNOSIS.

Physical and serological examinations revealed nothing abnormal. He was not sufficiently accessible for accurate testing of the sensorium, but the absence of physical findings and the typical katatonic nature of his symptoms were sufficient grounds for the exclusion of organic delirium. At no time did he show genuine elation. In spite of his excitement his emotion was thin and quite lacking in contagion. He was not accelerated and did not show flight of ideas, but rather the stereotyped repetition of meaningless phrases. His mental content was typically schizophrenic. In spite of symptoms with a paranoid colouring, the predominant feature of the clinical picture was his inco-ordinated activity and excitement. He was therefore regarded as of the katatonic type.

#### TREATMENT.

He was given 30 treatments by electro-narcosis, three times weekly, starting on 21/7/48. He received atropin and thiopentone premedication. The electrodes were placed frontally and the average coma-dose was 145 mA. No difficulties were encountered.

## RESULT.

He showed no change whatever until he had had 15 treatments. Then, within two or three days, he became much quieter. After that he had short phases in which he conversed rationally and asked to be given work, but these ended in erratic conduct and a resumption of incoherent speech. Nevertheless the general trend of progress was maintained, and when his course of electro-narcosis was finished, he was no longer excited or overactive. He was, moreover, capable of occupation, and was co-operating readily in a programme of rehabilitation. His conduct was still erratic and his manner very strange, and there was considerable thinning of affect. His speech was inclined to be incoherent, but he no longer expressed his former delusions, and there was no evidence of hallucinations.

During the next two months his slow improvement continued. His manner became more normal, and his speech more rational and connected. He was able to spend several days at home at Christmas, and eventually left hospital on 5/2/49, 28 weeks after electro-narcosis was started. He still showed some thinning of affect and oddity of manner, so was regarded as having made a social recovery.

## DURATION OF ILLNESS.

He had been ill for less than a month when electro-narcosis was begun.

CASE 79      Male.      Admitted 31.5.48.      Age 21.

AETIOLOGY AND PSYCHOPATHOLOGY.

1) Family History. There was no history of mental or nervous disorder of undoubted relevance. A woman cousin suffered from a puerperal psychosis in 1947, and made a good recovery. The patient was the only son of adoring parents, who were both somewhat unstable and hypochondriacal.

2) Early History and Development. He was a heavy baby at birth, was bottle fed and was inclined to be sleepless. He did not walk till he was two; he was knock-kneed and flat-footed and showed poor powers of balance. When he went to school he was afraid of the other children and was away a great deal owing to ill health. He was said, however, to be intelligent and at fourteen started clerical work. He had two jobs only before being called up in 1945. As he hated the idea of killing people he volunteered for the mines, but was only there for four months before being discharged as medically unfit. During most of his time in the mines he was off work with trivial complaints, and was finally rejected owing to "fallen arches".

3) Temperament. He was a solitary, bookish lad, useless at games and therefore unable to share the athletic pursuits of his friends. He threw himself whole-heartedly into a number of hobbies, dropping old ones as new ones came along and never achieving proficiency at any. He showed little capacity at any time in any sphere for persistent effort. When called up he was horrified at the ways of his fellow



miners.

4) Sexual Life. He had a very nice girl friend at the time of his admission to hospital, but had not known many girls and in general was shy and awkward in their company.

5) Summary of Causative Factors. The physical and psychological conditions of his early development combined to produce a boy poorly equipped to cope with the problems of adolescence and adult life. Although his experiences in the mines were certainly relevant to his breakdown, he remained fairly well adapted to his usual sphere of life for a considerable time afterwards and finally broke down without any obvious exogenic cause.

CLINICAL MANIFESTATIONS. His parents considered that he showed a change in character and outlook when he came back from the mines. While there he was "converted" by an evangelist. Afterwards he devoted an increasing amount of time to trying to reconcile science and religion with the help of books. He became increasingly solitary and confessed to a fear of hell. He was, however, capable of carrying out his clerical work satisfactorily until the week before admission to hospital, when he had a panic attack, ostensibly at the idea that perhaps there was no God after all. Nevertheless, feelings of unreality and depersonalisation had been growing for about two years. At first he had spasms of feeling that things round him were unreal. These grew longer and more intense and gradually became associated with a feeling that he

himself was "not here". He felt himself changed in some peculiar way, and lost interest in his work and in his girl. During the four months preceding admission he felt that everything was completely dreamlike; he wondered if he would suddenly wake up and find himself somewhere else.

On admission the striking thing about him was his profound emotional failure and loss both of energy and interest in his environment. He said that his feelings of unreality and depersonalisation caused him distress, but showed no sign of emotional reaction at all. His thought content was vague and idiosyncratic, and he made little effort to communicate it. He was unable to marshal any arguments, scientific or theological, on the controversy which was supposed to have absorbed his interest for years. He described in naive and childish language his simple speculations as to why trees and flowers were made as they are. His ruminations appeared to cause little distress, but were strong enough in their hold to cause frequent blocking of the train of thought.

In the sheltered environment of hospital he soon improved; his interest in his environment revived, he made efforts at mixing socially and proved himself capable of useful work. Nearly two months after admission, however, he went home on leave; his father had a narrow escape from being run over by a car. The patient came back to hospital in a distressed state, showing emotional activity for the first time. He announced that neither he nor the universe existed,

and stopped trying to work or to mix socially.

DIAGNOSIS. Important physical factors were excluded by clinical and serological examinations. The alternatives to schizophrenia were either the depressive element of an affective psychosis, or a depersonalisation syndrome in a neurotic setting. He showed no emotional reaction or thought content of a depressive type. Depersonalisation was obviously present, but his profound affective failure and bizarre thought processes of archaic type, were clearly schizophrenic. His withdrawal from reality was total in its quality, though not in extent at the time treatment was instituted. He was of the simple type of schizophrenic.

TREATMENT. He was given twenty-four electro-narcosis treatments, three times weekly, starting on 23.7.48. Two short interruptions were caused by trivial intercurrent affections. He received thiopentone pre-medication; the electrodes were placed frontally and the average coma-dose was 155 mA. Nothing untoward occurred and he finished his course on 29.9.48.

RESULT. During his course of treatment he made slow but steady progress. He became brisker and more interested in his surroundings. The quality of his work improved and he became more sociable. By the end of his course his ideas of unreality and depersonalisation had cleared up entirely; he was capable of expressing simple ideas accurately and clearly. His rumination on scientific and religious topics ceased

entirely.

Four weeks later, however, when the possibility of his return home became an urgent topic, he again complained of unreality feelings and was obviously unwilling to leave hospital. This state of affairs continued for nearly two months, when improvement again occurred. On 16.1.49, twentyfive weeks after electro-narcosis was begun he left hospital. He showed some flattening of affect, but showed adequate confidence to face a less sheltered environment provided psychiatric help were easily available. He was regarded as having made a social recovery.

DURATION OF ILLNESS. The history indicated that he was continuously and progressively abnormal after his return from the mines in October 1945. The duration at the start of electro-narcosis was therefore two years and nine months.



AETIOLOGY AND PSYCHOPATHOLOGY.

1) Family History. There was no history of mental or nervous disorder of undoubted relevance. A woman cousin suffered from a puerperal psychosis in 1947, and made a good recovery. The patient was the only son of adoring parents, who were both somewhat unstable and hypochondriacal.

2) Early History and Development. He was a heavy baby at birth, was bottle fed and was inclined to be sleepless. He did not walk till he was two; he was knock-kneed and flat-footed and showed poor powers of balance. When he went to school he was afraid of the other children and was away a great deal owing to ill health. He was said, however, to be intelligent and at fourteen started clerical work. He had two jobs only before being called up in 1945. As he hated the idea of killing people he volunteered for the mines, but was only there for four months before being discharged as medically unfit. During most of his time in the mines he was off work with trivial complaints, and was finally rejected owing to "fallen arches".

3) Temperament. He was a solitary, bookish lad, useless at games and therefore unable to share the athletic pursuits of his friends. He threw himself whole-heartedly into a number of hobbies, dropping old ones as new ones came along and never achieving proficiency at any. He showed little capacity at any time in any sphere for persistent effort. When called up he was horrified at the ways of his fellow

CASE 83. Male. Admitted 11/8/48. Age 30.

AETIOLOGY AND PSYCHOPATHOLOGY.

1). Family History. His father was a healthy active man, still working in a sandpit although over 60. His mother was a brisk old lady who suffered from occasional attacks of asthma. He had one brother and two sisters, all healthy and married. There was no family history of mental or nervous disorder.

Early History and Development. His infancy and early childhood were uneventful. At school he was bright, and was usually the top of his class. He left at 14 and worked as a butcher's boy for 2 years. Then he worked in the same sandpit as his father until he joined the Navy in 1939. He did well there until his demobilisation with a good character in November 1945, after which he became a bus driver for London Transport. He held this job until his breakdown, rather more than two years later.

3). Temperament. At school, though strong physically, he was shy and sensitive, and was much bullied by other boys. In later life he was quiet and reserved, but fairly sociable. Responsibility worried him, but he was happy and worked well at a steady routine job. He had few friends, except in the Navy, and never got over his sensitivity to criticism.

4). Sexual Life. He had one or two girl friends before he married in 1942. He knew his wife for 6 months before they were married, and their life together was happy, though interrupted by the war. He had one daughter, born in 1944.

5). Summary of Causative Factors. No external precipitating cause was ever discovered, nor was there any evidence of hereditary predisposing factors. His illness was therefore regarded as arising out of the inadequacies of his personality. Apart from his schizoid traits, he was apparently not adaptable. He was at his best in the Navy, and presumably found the varied demands of married civilian life and paternity too much for him.

#### CLINICAL MANIFESTATIONS.

In April 1948 he became listless and tired. He found work too much for him and complained of vague pains in his head. He could not concentrate on anything for long, and spent most of his time sitting in a chair gazing into space and rubbing the back of his head. He slept badly and found his small daughter very irritating. As things got no better he was admitted to Barming Heath on 11/8/48.

On examination he was quiet and self-absorbed. He occasionally showed signs of tension and anxiety, and at times appeared suspicious and rather resentful, but in the main showed apathy and flattening of affect. His speech was laconic and off-hand and his thought content vague. Occasionally he lapsed into silence in the middle of a sentence and sank into reverie. He said he felt that he had been different to other people from birth, and could not make contact with them. He said he had no mind of his own, and that someone else controlled it, and so dictated his actions. He believed that other people were talking about him

in a disparaging way, but the evidence in favour of hallucinations was not conclusive. He made no effort to establish social contacts, but was willing to occupy himself. He showed little change up to the time that electro-narcosis was started.

#### DIAGNOSIS.

Physical and serological examination showed nothing significant. The possibility of an anxiety state was considered, as he displayed some tension. This, however, was short-lived, and was quite overshadowed by his affective failure and thought disorder. He showed no clouding of consciousness to suggest an organic origin for his symptoms. His emotional reactions and mental content were not characteristic of depression. He was therefore regarded as a schizophrenic. The presence of ideas of passivity and reference led to him being classified in the paranoid group.

#### TREATMENT.

He was given a course of 31 treatments by electro-narcosis, three times weekly, starting on 25/8/48. He received atropin and thiopentone premedication. On the first 5 occasions he was given "Modified Electro-shock". That is to say, after a first stage of 30 seconds at 180 mA, the current level was reduced to zero in 15 seconds, resulting in a modified convulsion of the type produced by E.C.T. The main difference from E.C.T. was that the clonic movements were greatly reduced in amplitude by the



prolongation of the period of tonus due to the continued passage of the current. This appeared to have no effect on his mental state, so on subsequent occasions the usual technique was employed. On the next eleven occasions the electrodes were placed frontally and the average coma-dose was 140 mA. For the remaining 15 treatments the electrodes were placed frontally and moved temporally during the course of treatment. The average coma-dose was then 125 mA. No difficulties were encountered.

#### RESULT.

He began to improve slowly from the time that treatment by the usual technique was instituted. By the time his course was finished, he was much more alert and interested in his surroundings. He showed much greater power of emotional response. His ideas of reference and passivity had cleared up entirely and he was making full use of his social opportunities. His powers of concentration and persistence at work had increased considerably. He left hospital on 26/11/48, 13 weeks after electro-narcosis was begun. He still showed some flattening of affect and vagueness of thought content, so he was considered to have made a social recovery.

#### DURATION OF ILLNESS.

He had been ill for 4 months when electro-narcosis was started.

Case 85 Female. Admitted 16.10.48. Age 22.

AETIOLOGY AND PSYCHOPATHOLOGY.

1) Family History. The father was an ex-Royal Naval Petty Officer, still in the reserve, but working as foreman of a laundry. He was forceful and quick-tempered and expected his family to jump to it when told to do anything. The mother was a quiet, homely woman, rather deaf but intelligent. The patient had one younger sister, working in London, a cheerful extravert. There was no history of mental or nervous disorder.

2) Early History and Development. The patient's mother had a bad confinement with her. She was born black and required artificial respiration, but developed into a fine child and won a first prize at a baby show in Tunbridge Wells. She was a placid youngster who showed no nervous traits. She did quite well at school, and just failed to get a scholarship. She was not upset by this; she went to work in the local co-operative stores, and remained there apart from three and a half years in the W.A.A.F., until her illness. She had a good work record and was happy at the Stores. During 1944 and 1945 she was in the forces and posted in the north of England. She made many friends and enjoyed the life. Shortly before demobilisation in July 1947, she said she didn't like the type of girl in the forces then, and that she would be glad to leave.,

3) Temperament. She was sensitive, inclined to be self-conscious and hated criticism, whether directed against herself or other people. She hated village gossip and would not pass it on; she often got very angry about it. She was extremely conscientious both at work and in the house and could turn her hand to any domestic job. Although quiet and not very friendly, she used to go to dances with her boyfriend and was always being roped in to play the piano at parties. When at a loose-end at home, she did not read, sew or knit but used to sit in a chair with a "far away look" biting her lip.

4) Sexual Life. She and her boy-friend have been mutually faithful to one another since school-days. The patient's parents thoroughly approve of him. The patient was said to have developed "womb trouble" as a result of dragging heavy kit about in the W.A.A.F.

5) Summary of Causative Factors. The previous personality showed many schizoid traits, but her actual breakdown was sudden and unexpected without any obvious exagenic factor.

CLINICAL MANIFESTATIONS. Shortly before admission to hospital the patient had a week's holiday at the seaside. She returned saying that she had had a marvellous time. She then developed a heavy cold, and one afternoon collapsed; she had a seizure all down the left side, and the left side of her face was drawn up. She then cried and behaved in what

her parents described as a hysterical manner. The doctor was sent for, and gave her an injection. About an hour later she had a "fit", in which she went blue, lost consciousness and foamed at the mouth. She was not incontinent and did not bite her tongue. During the night she had many more seizures, so she was admitted to a general hospital. The possibility of meningitis was considered but a very thorough investigation failed to reveal anything physically wrong. The patient behaved in a wild and erratic way. She said she had nothing to live for and turned against her mother and her boyfriend. She said she would murder them both and threw her engagement ring across the room. She then refused food and complained of being trampled to death by a black bull. She was transferred to the observation ward. While there she appeared indifferent to her surroundings and unable to recognise people around her. She often lay quiet with her limbs in strange attitudes and a rapt expression on her face, resenting interference and reacting negativistically to any approach. At other times she was overactive; she tried to tear her clothes off and expose herself at the windows of the ward, and tried to push a face flannel into her vagina.

In due course she was admitted to Barming Heath Hospital under certificate. There the alternation between resistive stupor and acute excitement became more clearly defined. As her



physical condition gave rise to considerable anxiety, electro-narcosis was started only a fortnight after admission, after the opinion of the visiting physician about her fitness had been obtained. She had, however, been under observation by a psychiatrist from Barming Heath for a month before being given electro-narcosis.

DIAGNOSIS. The differentiation between schizophrenia of the katatonic type and a toxic-infective syndrome was not easy. The clear-cut alternation of phase was strongly in favour of the former and so were her bizarre poses and shameless behaviour. Her loss of touch with her environment appeared to be a schizophrenic withdrawal, and not the result of confusion. Also, exhaustive investigation revealed no physical abnormality. She showed no characteristics of an affective psychosis.

TREATMENT. She was given twelve treatments by electro-narcosis starting on 30.10.48. She had thiopentone intravenously before each treatment. The electrodes were placed frontally but moved temporally during treatment. The average coma-dose was 130 mA. She developed slight sores on the forehead from burns, which probably occurred because she had previously been rubbing and picking her skin. On two occasions (2nd and 6th treatments) the pulse became rapid and irregular, necessitating a lowering of the dose of electricity. Termination was not necessary on either occasion.

No other difficulties were encountered.

RESULT. The improvement after her course of treatment was striking. The phases of alternating excitement and stupor were flattened out. She was co-operative, and beginning to work and make social advances. A few days after her course was over she had a period of confusion with perplexity and indecision. As this passed off it became clear that she was still strange in manner and also suffering from flattening of affective responses. She continued to respond to measures for her rehabilitation, and hopes were entertained that she would leave hospital free from psychotic symptoms. Unfortunately her parents ordered her discharge prematurely on 30.12.48. She was not then symptom free and could only be regarded as a social recovery. She left hospital eight weeks after electro-narcosis was begun.

DURATION OF ILLNESS. She had been ill just over one month when electro-narcosis was begun.

Although described as "a perfect housewife", she made no effort to share her husband's interests, and was said to "keep her feelings bottled up".

Sexual Life. She married late in life. Her husband was a gardener in a household to which she was housemaid. From the beginning she had a horror of sexual intercourse, which her husband felt to be abnormal. He therefore felt unwilling to press it on her, and

CASE 90. Female. Admitted 25/9/48. Age 47.

AETIOLOGY AND PSYCHOPATHOLOGY.

1). Family History. The patient's father was an N.C.O. in the Regular Army. No details of her mother were available. The family were Irish, and the patient's brothers and sisters were friendly, amusing people. There was no history of mental or nervous disorder.

2). Early History and Development. She was brought up in Ireland, and was left in the charge of an Aunt for long periods when her father was on the move. She went to a Convent school, where her attainments were average. When she left she went into domestic service. She kept her jobs, only changing them when circumstances forced her to, and remained in service until she married at the age of 34.

3). Temperament. She was quite unlike the proverbial Irish person. From an early age she was quiet and had few friends. Before marriage she had few interests outside her work, and afterwards would never go out with her husband, except for an occasional visit to the pictures. Although described as "A perfect housewife", she made no effort to share her husband's interests, and was said to "Keep her feelings bottled up".

4). Sexual Life. She married late in life. Her husband was a gardener in a household to which she was housemaid. From the beginning she had a horror of sexual intercourse, which her husband felt to be abnormal. He therefore felt unwilling to press it on her, and

intercourse only took place three or four times in 13 years of marriage. Although her husband felt that his health was affected by what he felt to be an unnatural state of affairs, he continued affectionate and faithful in his attitude towards her.

5). Summary of Causative Factors. She displayed strong schizoid tendencies from an early age, but information was lacking to shed much light on their origin or development. Her breakdown occurred at the menopausal epoch, following news of the death in Ireland of an aunt to whom she was much attached.

#### CLINICAL MANIFESTATIONS.

Just over a fortnight before her admission to hospital the patient received news of the illness of her aunt. She immediately made arrangements to go to Ireland to nurse her, but received news of her death before she could set out. She then did something which she had never done before; she attended several spiritualist seances in quick succession. She was obviously labouring under stress, as she was a practicing Catholic. Ten days before admission she was found in a chair sitting rigidly, with her eyes shut, saying that she must stay there for three hours. That night she was afraid to go to bed, and insisted on sleeping with a niece who was in the house. Then, in her husband's words, "She began raving about spiritualist things". She also talked a lot about nuns and priests, and claimed to have news of a cousin killed in the first World War, details of whose death had never been



known. She thought people were watching her and that the house was "Wired for information". She talked a great deal about television and became very restless. After 72 hours of continuous efforts to control her, her husband capitulated and she was admitted to hospital on 25/9/48.

On examination she was morbidly preoccupied and indifferent to her environment. She showed profound emotional failure, with thin residual suspicion and evasiveness. Once in hospital she was not restless or overactive, but she was quite asocial and incapable of occupation. Her manner was strange and she spent much time staring into space with a rapt expression, occasionally muttering to herself. Her speech was incoherent and disconnected; her thought content was inchoate. She suffered from hallucinations of spirit voices and expressed vague, involved delusions of a predominantly persecutory type. She said that two years before admission a piece of wire had been thrust into her brain after she had written to the editor of the Evening Standard, since when all her friends had been curious about her. She described a peculiar electrical sensation in her toes at night, which she ascribed to the activities of the B.B.C. She showed severe thought blocking, accompanied by much perplexity. She showed no essential change before electro-narcosis was begun.

#### DIAGNOSIS.

Physical and serological investigations revealed

nothing significant. She showed no clouding of consciousness and no memory defect, nor was there any undue sensitivity to impressions, with the tendency to embroider or confabulate on such a basis. The possibility of a delirium of organic origin was therefore rejected. At no time did she show any elation or acceleration, nor was her emotional tone ever depressive. The possibility of an affective psychosis was therefore ruled out. She was classified as a paranoid schizophrenic rather than as suffering from a predominantly paranoid psychosis, owing to the thin affect and incoherent speech, the latter reflecting her chaotic thought content.

#### TREATMENT.

She was given 18 treatments by electro-narcosis, three times weekly, starting on 30/11/48. She received atropin and thiopentone premedication. The electrodes were placed frontally and moved temporally during the course of each treatment. The average coma dose was 115 mA. During the first two treatments she had rather frequent extrasystoles, but on subsequent occasions the rhythm of the heart was normal. No difficulties were encountered.

#### RESULT.

During her course of electro-narcosis she made slow progress. When it was over, she was much more alert and interested in her environment. Her emotional

power was also much increased. The effect of this was that she made many complaints and was generally hostile and critical in her attitude to the hospital. Her husband, however, said that this was her customary attitude to everything outside her own home. Her manner was more normal, she was no longer hallucinated, and her ideas of electrical interference had cleared up. She did some ward work in the spirit of showing how it should be done, and was occasionally sociable in a grudging way. As was to be expected in these circumstances, she left hospital prematurely on 29/1/49, 8 weeks after electro-narcosis was begun. She was regarded as having made a social recovery.

#### DURATION OF ILLNESS.

So far as reliable evidence went, she had been ill for less than a month when admitted to hospital, and for just over 2 months when electro-narcosis was begun.

11. Temperament. Before joining the R.A.F. he was a "Mother's boy", but in the short time between joining up and going abroad he turned completely against his mother, and there were quarrels every time he went home. He was solitary, lacking in self-confidence and drive, and had few friends.

CASE 102. Male. Admitted 22/11/48. Age 27.

AETIOLOGY AND PSYCHOPATHOLOGY.

1). Family History. The patient's father was said to be very cruel to his mother, and the couple were separated when the patient was 14. The mother was a chronic neurotic and did not go out for many years before she died during the war. There were seven children, of whom the patient was the second youngest. The others were all normal and doing well. There was no family history of mental disorder apart from the mother.

2). Early History and Development. His childhood was unsettled owing to the unhappy home conditions. At school he was below average, but the question of mental deficiency was never raised. He left at 14 and did a number of "Blind alley" jobs until he joined the R.A.F. in 1940. He served on the ground staff for 6 years, for most of which he was in India. He was demobilised in the ordinary way with a good report on his work and conduct. He then worked as handyman for a friend who was a market-gardener and horticulturalist, but gave up in May 1947 for health reasons.

3). Temperament. Before joining the R.A.F. he was a "Mother's boy", but in the short time between joining up and going abroad he turned completely against his mother, and there were quarrels every time he went home. He was solitary, lacking in self-confidence and drive, and had few friends.



He was, however, affectionate and good-tempered. While living with his sister, he enjoyed playing with her children, and was a firm favourite with them. He was good with his hands and showed fair ingenuity in tackling a variety of odd jobs.

4). Sexual Life. He never showed any interest in girls, and was shy in their company.

5). Summary of Causative Factors. He was undoubtedly backward and unable to keep up with his contemporaries, but had sufficient realisation of the situation to be upset by it. His home environment and the influence of his mother were unfavourable and unlikely to bring out the best in him. He was at his best in the orderly, disciplined conditions of the R.A.F. and seemed unable to meet the increased demands made on him by civilian life.

#### CLINICAL MANIFESTATIONS.

In the spring of 1947 he began to feel unable to meet people, and lost his self-confidence and power of concentration. In June he was admitted to a private mental hospital, where he was regarded as a schizophrenic. He had a course of insulin shock treatment without benefit. He left in November 1947, with a recommendation to get a job. He wanted to go in for horticulture, and the Ministry of Labour were prepared to arrange training, but he insisted that he needed more treatment. He stayed idly in his sister's house, ruminating on his father's behaviour towards his mother. His

sister was tolerant and understanding and the next move was made by the patient, who felt that he should not live on his brother-in-law's bounty indefinitely. His doctor referred him to a psychiatric clinic, and voluntary treatment at Barming Heath Hospital was arranged.

On examination he was curiously stiff in deportment and odd in manner, though he did not show florid mannerisms like grimacing or explosive laughter. He showed little interest in his environment, and severe affective failure was evident. He made no social efforts at all, and complained of feeling scared of other people, but actually showed no sign of tension or anxiety whatever. He complained of strong feelings of apathy and lethargy, which he could not shake off. His speech was coherent, but appeared to cost a great effort, and often he would tail off into silence in the middle of a sentence. There was no evidence that he was hallucinated, but he said he was sure that other people were talking about him all the time. He was quite willing to occupy himself with simple jobs under supervision. He showed no change before being given electro-narcosis.

#### DIAGNOSIS.

Physical and serological investigations revealed nothing abnormal. He showed no clouding of consciousness or defect of memory to suggest an organic syndrome. His affective response was not depressive in

character, and he showed no genuine anxiety. The diagnosis then lay between schizophrenia of the simple type, and mental deficiency with possible neurotic symptoms associated with it. The deciding factor was the severity of his emotional impairment and his loss of contact with his environment. Moreover, at the previous hospital he had been seen by a psychiatrist of high standing, whose opinion was not lightly to be laid aside. Also it was hoped that he could not have served 6 years in the R.A.F. and obtained a good report if he had been a mental defective. Intelligence tests performed while he was mentally ill were felt to be no fair guide in settling the point. For the reasons stated he was regarded as a schizophrenic of the simple type.

#### TREATMENT.

He was given 19 treatments by electro-narcosis, 3 times weekly, starting on 13/12/48. He received atropin and thiopentone premedication. The electrodes were placed frontally and moved temporally during the course of each treatment. The average coma-dose was 120 mA. No difficulties were encountered.

#### RESULT.

He made slow but definite progress while receiving electro-narcosis. When it was over he showed a much improved power of emotional response, and was altogether brisker, more alert and interested in his environment. He made use of his social opportunities

enjoyed parole, and showed improved concentration and persistence in his work. He was very keen to go out and take his horticultural training, and wanted to be off as soon as electro-narcosis was finished. It was felt that it would be an error of handling to take the edge off his desire in any way, so he left hospital within a week of ending treatment, and 7 weeks after it was begun. He was regarded as having made a social recovery.

#### DURATION OF ILLNESS.

He had been ill for 1 year and 6 months when electro-narcosis was begun.



CASE 104. Male. Admitted 9/11/48. Age 26.

AETIOLOGY AND PSYCHOPATHOLOGY.

1). Family History. He came of an artisan class family. His father had a stroke late in 1947 but was previously healthy; his mother was alive and well. He had two brothers, one older and one younger. Both were normal and doing well. There was no family history of mental disorder.

2). Early History and Development. Birth and infancy were normal. He was an average scholar, but did not play games as he was not very robust physically. He did not suffer from any particular disease or disability. He then worked as a photographer's assistant until the war came. He then joined the R.A.F. as an armourer. He was demobilised in August 1946 with a good record.

3). Temperament. Even when young he did not show much physical energy, but was noted for his obstinacy. Later on he proved a poor mixer, and had few interests outside his work and home. He did not go to the pictures or to dances, but spent his spare time reading or pottering about with various hobbies.

4). Sexual Life. He never showed any interest in girls.

5). Summary of Causative Factors. His personality was clearly schizoid from an early age, but available information threw no light on the reasons for it. His war service was passed in relatively sheltered conditions and his breakdown was probably due to

failure to adapt to civilian life, rather than to the stress of service conditions.

#### CLINICAL MANIFESTATIONS.

He seemed moody, apathetic and unable to settle down to anything after leaving the R.A.F. in August 1946. He tried eight jobs in the next two years, but threw each one up after a few weeks. He simply said he got "fed up" with them and could not stick them any longer. Between these efforts he had long spells of inactivity at home. He said himself that he had not felt normal since leaving the service, and gradually his behaviour became more strange. He would not get up till late, and sat about all day staring vacantly about him. He became very self-conscious because his hair was getting thin, and he smothered his head in grease to help it to grow. He began to feel that people were looking at him and laughing, and finally became convinced that his mind was being read. He was admitted to Barming Heath Hospital on 9/11/48.

The striking feature of his case was his profound apathy and affective failure. He showed no reaction of interest in his environment and complained of deadly lethargy and lack of energy. He made no social efforts at all, and at first was incapable of occupation. His speech was slow, and he often had to be roused from an abstracted state before he could answer. Blocking of thought was evident, and he complained of people staring at him and laughing. He still believed his mind was being

read. Before electro-narcosis was begun he improved to the extent of occupying himself with simple jobs in the occupational therapy department, but otherwise showed no change.

#### DIAGNOSIS.

Physical and serological examinations showed nothing abnormal. The main alternative to schizophrenia was an affective psychosis. His emotional reaction, however, was clearly not depressive, and his thought content was schizophrenic, not depressive. The predominance of apathy and energy loss, and the relative paucity of pathological content led to him being regarded as a schizophrenic of the simple type.

#### TREATMENT.

He was given 19 treatments by electro-narcosis, three times weekly, starting on 13/12/48. He received atropin and thiopentone premedication. The electrodes were placed frontally and moved temporally during the course of each treatment. The average coma-dose was 125 mA. No difficulties were encountered.

#### RESULT.

He showed little change until he had been undergoing treatment for three weeks. Improvement then became noticeable and continued until the end of his course. He was then much more alert and interested in his environment. His capacity for emotional response was increased and he displayed more energy. He showed

better concentration and persistence at work, and was beginning to make social efforts. His ideas of reference and passivity had cleared up and he was beginning to make reasonable plans for the future. He continued to do well and left hospital on 20/2/48, 9 weeks after electro-narcosis was begun. He still showed some flattening of affect, and his energy and initiative left a good deal to be desired, so he was regarded as having made a social recovery.

#### DURATION OF ILLNESS.

He had been ill for 2 years and 4 months when electro-narcosis was begun.

2. Early History and Development, Birth and Infancy. His mother was a school teacher and his father was a clerk. He was born on 10/10/25. He was a placid, in contrast to the other members of the family. After school he became a packman in a publishing warehouse, but after a year got a better job as an office boy in the City. He stayed there until called up at the age of 18. He served in the Army for 13 months.

3. Temperament. He was a quiet and sensitive boy, very dependent on his mother. He was rather a model child and became noticeably shy at the age of 11. After that he became a bookworm and mixed very little with others. The contrast with the other children was pronounced.

4. Sexual Life. He never had anything to do with girls, though several were attracted to him and made friendly advances.



CASE 10. Male. Admitted 30/10/47. Age 19.

AETIOLOGY AND PSYCHOPATHOLOGY.

1). Family History. He came of a working-class family. His father gave the impression of a rather weak character, but was said to be strict with his children, though making the patient his favourite. The mother was pleasant and friendly, but woolly-minded and inconsistent in her statements. She was obviously biassed by a desire to lay the blame for her son's illness on the Army. The patient had an elder brother and an elder sister. Both won scholarships and were good mixers. There was also a younger brother still at school. There was no family history of nervous or mental disorder.

2). Early History and Development. Birth and infancy were normal. At school he was rather a plodder, in contrast to the elder members of the family. After school he became a packer in a publishing warehouse, but after a year got a better job as an office boy in the City. He stayed there until called up at the age of 18. He served in the Army for 13 months.

3). Temperament. He was a quiet and sensitive boy, very dependent on his mother. He was rather a model child and became noticeably shy at the age of 11. After that he became a bookworm and mixed very little with others. The contrast with the older children was pronounced.

4). Sexual Life. He never had anything to do with girls, though several were attracted to him and made friendly advances.

5). Summary of Causative Factors. His illness was almost certainly due to the impact of army life on a boy with such strongly marked schizoid tendencies.

#### CLINICAL MANIFESTATIONS.

He dreaded his call-up for months before it came. From the first he hated army life. He complained that he was with a very rough crowd, who continued to tease him although he kept himself to himself. After 7 months he absented himself without leave and went home, but after two days went back to his unit on the advice of his parents. In August 1947 he did the same thing again, but this time the police picked him up. They found him hiding in the back garden "white and shaking like a leaf". He was then admitted to a military hospital and was sent home in October with an escort, having been discharged from the army. He was then dazed in appearance and did not recognise his parents or his home surroundings. On 30/10/47 he was admitted to Barming Heath Hospital.

On examination he was withdrawn from contact with his environment. He did nothing for himself and needed close supervision as regards toilet and diet. He was mute, resisted attention and displayed negativistic tendencies. He grinned and gesticulated in a meaningless way and often maintained curious poses for considerable periods. At times he gazed into the corner of his room and appeared to be listening intently, as though hallucinated. Soon after admission he had several periods of short-lived

excitement, with sudden impulsive outbursts. He made no spontaneous improvement, so on 19/11/47 was started on a course of E.C.T. As he showed no improvement after 11 convulsions, this was discontinued. No further change occurred before electro-narcosis was tried.

#### DIAGNOSIS.

Physical and serological investigations revealed nothing of significance. The possibility of a delirium of organic origin was considered, but in his stuporose phases he showed intense negativism. In his excited phases he was blindly impulsive and overactive, and showed none of the over-sensitiveness to impressions of a toxic-infective case.

He showed no elation or acceleration, and none of the passivity of a depressive stupor. In any case his age rendered such a diagnosis improbable. The picture was, in fact, characteristic of katatonic schizophrenia.

#### TREATMENT.

He was given 12 treatments by electro-narcosis, three times weekly, starting on 30/1/48. He received atropin premedication only. The electrodes were temporally placed and the average coma-dose was 120 mA. No difficulties were encountered.

#### RESULT.

His former phases of resistive stupor and blind excitement became much less pronounced. He occasionally

answered simple questions and even did a little work. He still showed severe flattening of affect and was erratic in conduct. The most obvious change was that he was amiable and co-operative, instead of being negativistic. His condition fluctuated somewhat in the months following treatment, but the degree of improvement described was still present 10 months after electro-narcosis was finished.

#### DURATION OF ILLNESS.

He had been ill for just under 6 months when electro-narcosis was begun, reckoning from his second absence without leave.



Case 12. Male. Admitted 11.12.47. Age 23.

AETIOLOGY AND PSYCHOPATHOLOGY.

1. Family History. He was the illegitimate child of a lady's maid. His father's identity was never discovered, but he was believed to be the husband of the patient's mother's employer. He was looked after by a foster mother, who became so fond of him that she adopted him when one year and nine months old, instead of letting him return to the orphanage.

2. Early History and Development. He was brought up by his foster mother with her own children, who were all older than he was. They were all fond of him and treated him well, but friction developed between the foster mother and her husband, though not about the patient. The home atmosphere was somewhat unsettled, and the parents separated when the patient was 11 years old. He was an average scholar, or below, and performed various unskilled "dead-end" jobs between leaving school and joining the navy in 1943. He served in the Mediterranean and saw a lot of action, without appearing to be seriously affected by it. In June 1946, while still in the navy, he broke down for the first time.

3. Temperament. He was a solitary child from an early age. He was also said to be bad-tempered and irresponsible. He took little notice of punishment or attempts at correction, and was in trouble with the

police for stealing when 14 years old. It was therefore reasonable to infer that he showed psycopathic trends of the predominantly passive-inadequate type, as well as schizoid tendencies.

4. Sexual Life. No details were known, but he was said never to have shown any interest in girls.

5. Summary of Causative Factors. The pre-dominating element in his illness was constitutional predisposition, probably hereditary in part, while also arising from the circumstances of his development. War service was hardly to blame, as he did not break down until well after the war was over. The death of his foster mother was an important contributory factor to his second breakdown.

CLINICAL MANIFESTATIONS. While serving abroad in June 1946, he was noticed to be odd in behaviour. He was sent home, diagnosed as a schizophrenic and admitted to a Naval mental hospital. He was described as grossly retarded, dull, and apathetic, with ideas of reference and delusions. His condition slowly deteriorated and flexibilitas cerea developed. On 31.7.46 he made a suicidal attempt. He was given a course of E.C.T., and improved for a short time, but quickly reverted to his condition before treatment. He then began to make spontaneous progress and was transferred to another naval hospital in November 1946.

He was there considered to be normal in thought and behaviour, and was accordingly discharged in January 1947. His case was referred to the National Association for Mental Health, who kept in touch with him until his next breakdown. In September 1947 the patient's foster mother was very pleased with his progress. He was hoping to start training as an electrician, and showed improved social initiative. In November 1947 his foster mother died and he rapidly broke down once more, being admitted to Barming Heath as a voluntary patient on 11.12.47.

After admission he alternated between phases of excitement and resistive stupor. While excited he was violently and impulsively overactive; he was often furiously aggressive and broke anything fragile that he could lay his hands on. At other times he was silent, resistive and very negativistic. After a few days he settled down somewhat and the picture changed. He grinned and grimaced to himself for no apparent reason, and adopted strange poses. He said, with a facile smile, that the nurses had a stock of atomic bombs and were planning to destroy the universe. His speech was incoherent and disconnected; on one occasion he paused in his remarks about atomic bombs to say, "And what about the phosphorus in the Sea? It might be stars!" He showed severe thinning of affect and expressed ideas of passivity about being

controlled by other people by psychic means.

Shortly after admission to hospital he was given a course of eight electrically induced convulsions. While this was in progress he showed some improvement, but relapsed again immediately it was over. He again showed alternating phases of excitement and stupor, and once more it was difficult to draw conclusions about his mental content. This state of affairs continued until electro-narcoses was started.

DIAGNOSIS. Clinical and serological investigations revealed nothing significant. The alternatives to schizophrenia were delirium of organic origin and mania. During the period when his mental content was accessible he showed no clouding of consciousness and no failure of memory except for the acutely excited period of his illness. He showed no over-sensitivity to impressions and no tendency to confabulate. Delirium was therefore rejected as a possible diagnosis. He showed no elation and little acceleration. His speech was disjointed but there was no flight of ideas, and he showed no distractibility or other evidence of heightened reaction to his environment. Mania was therefore ruled out. His affective thinning, speech disorder, archaic thinking and ideas of passivity were characteristically schizophrenic. The alternation of phase indicated the katatonic sub-type. The fact that he showed characteristic traits of a psychopathic



personality was noted as important.

TREATMENT. He was given twelve treatments by electro-narcosis, three times weekly starting on 30.1.48. He received atropin pre-medication only. The electrodes were placed frontally and the average coma-dose was 120 MA. No difficulties were encountered.

RESULT. Immediately after his course of treatment he was greatly improved. He showed neither excitement nor stupor. His interest in his environment and his emotional power were both enhanced. His speech was connected and his thought progresses normal, though vague and slow. He was mixing more freely with others and worked usefully. Ten days after his course of electro-narcosis was completed, he became confused. For several days he went about in a puzzled state. Then he signed his notice of intention to leave hospital against advice. He appeared dazed, was disoriented in time and appeared unable to remember anything said to him for longer than two minutes. He went home on 15.3.48 and on 24.3.48 a letter was received saying that he was in prison in London.

In prison he was described as being strange and erratic in his behaviour, rambling and incoherent in speech and disturbed by imaginary voices. He said his brain was influenced and controlled by a B.B.C. transmitter. He was readmitted to Barming Heath on 25.3.48. He showed no return of his former excitement or resistiveness, and was able to explain that he was

placed on remand as a result of throwing a brick through a neighbour's window. He said that he was ordered to do this by the B.B.C. He claimed that they influenced his thoughts by wireless waves, while he, in turn, could transmit his thoughts to them and have them broadcast. He showed a degree of detachment to his surroundings corresponding to his morbid pre-occupation with hallucinatory experience.

Apart from a very brief excited phase three weeks after admission, he co-operated well with all efforts aimed at his rehabilitation. His psychosis gradually receded and he was able to leave hospital on 2.9.48, by which time complete remission had occurred.

In assessing the result of treatment in his case, it was clear that he was not well enough when he departed from hospital in March to be considered as having relapsed when he returned. If he had not left in March, he would probably have been regarded as a complete remission, as electro-narcosis apparently made him accessible to rehabilitation. The fairest assessment appeared to be to regard him as improved.

DURATION OF ILLNESS. He had been ill for approximately two months when electro-narcosis was started.

CASE 25. Male. Admitted 1.3.47. Age 30.

AETIOLOGY AND PSYCHOPATHOLOGY.

1) Family History. He was the only child of neurotic parents. His father was a very jumpy man of over-anxious disposition; his mother suffered from a cardiac neurosis. Two maternal great aunts were in mental hospitals, and the whole of that side of the family tended to drink excessively.

2) Early History and Development. Birth and infancy were normal, but he grew into a delicate child. He was said to have had tuberculosis at the age of five, following whooping-cough. He was in hospital for six or seven weeks, but acceptable evidence in favour of the diagnosis was not available. At school he did quite well and then took a commercial training. He had various clerical jobs, but left them all after either an outburst of temper, or some difficulty with other members of the staff. There seemed to be no doubt that at all stages of his life he was much spoilt by his over-devoted and rather weak mother.

3) Temperament. From an early age he was a poor mixer. As a boy and young man he spent his spare time riding on buses or bicycling by himself. He was very bad tempered and used to display it if he did not get his own way at once. He was very self-centred and incapable of consideration for others, particularly at home. He was extremely neat and tidy, to the point of being fussy and meticulous and was very honest and reliable about money.

4) Sexual Life. He never had a special girl friend, but was not particularly shy with girls.

5) Summary of Causative Factors. There was probably a hereditary constitutional factor, but his developmental situation appeared to be the most important element in his case. He was clearly schizoid in his personal traits from an early age, and proved himself incapable of normal adaptation during adolescence. His breakdowns occurred without any obvious exagenic cause.

CLINICAL MANIFESTATIONS. Between February 1935 and January 1945 he was admitted to Barming Heath Hospital on four occasions. On the first three occasions his symptoms showed complete remission, but on the fourth his improvement was much less complete.

His first spell in hospital was from 15.2.35. to 9.6.35. He was admitted in an excited state with a strained and rather wild appearance. His talk was inconsequent and disconnected and he admitted hearing voices. His conduct was uncertain and erratic and his manner stiff and peculiar. Improvement occurred quite soon after admission. He co-operated with occupational therapy, became stable in conduct and went home with medical approval.

He returned to hospital on 22.8.37, having worked in his usual desultory way in the interim. His symptoms were very similar to those on his first admission, but more acute. The oddity of his manner was more obvious and his conduct was more erratic and impulsive. His improvement was slower, and remission did not take place for six months.



He was again admitted under certificate on 15.9.39 having pursued his usual career in the meanwhile. His father said that he would not tolerate any interference in his affairs and resented advice, however good, if it were contrary to his mood of the moment. On this occasion there was the nearest approach to an exagenic precipitating factor in his case, in the shape of the outbreak of war. His symptoms followed the usual pattern, with increase in severity and greater duration. Thin, facile affect was particularly apparent, and he did not leave hospital until September 1940.

He returned to Barming Heath in November 1943 with a similar clinical picture, but paranoid trends were more evident than before. He also complained for the first time of ideas of passivity and influence. He again made slow progress when occupied, but in January 1945 was still very odd in manner and erratic in conduct. He also showed severe affective thinning. One day he walked out of the hospital without troubling to give notice.

He was accepted once more as a voluntary patient on 25.5.45, and from that time was continuously ill until treated by electro-narcosis in 1948. Actually his condition had deteriorated rapidly after leaving hospital in January, and only his mother's indulgence had delayed his re-admission.

For the greater part of the time he showed defective interest in his surroundings, with a tendency to adopt strange poses. He grinned and grimaced

frequently to himself, and showed incongruity between his affective responses and the current of spoken thought. His thought content was vague and idiosyncratic and his behaviour was erratic with a constant liability to foolish impulse. From time to time he had phases of more severe restlessness and over-activity, accompanied by vivid auditory hallucinations. At such times he was often aggressive, and this tendency increased as the months passed. There were, apparently, associated ideas of reference, as he at times accused the other patients and members of the staff of conspiring to prevent him from succeeding in life. He left hospital against advice in January 1947, and was re-admitted in March 1947, under certificate, but there was no remission in his symptoms, which continued on the lines described until he was given electro-narcosis.

DIAGNOSIS. There was no doubt on this score when he was given electro-narcosis. On earlier occasions mania and organic delirium had to be excluded. His inertia, mannerisms and hallucinations indicated schizophrenia of the hebephrenic type. The atypical symptoms, in the shape of excitement and aggression appeared to be due to an admixture of psychopathy of the predominantly aggressive type, as evinced by his coldly selfish temperament, his explosive temper, and the final development of frank aggressiveness.

TREATMENT. He was given twelve treatments by electro-

narcosis, three times weekly, starting on 27.2.48. He received atropin premedication only. The electrodes were placed temporally and the average coma-dose was 105 mA. After his course was over he said he felt the initial shock like a blow on the head. At the time, however, he showed no sign of apprehension. No difficulties were encountered.

RESULT. The effect of the first four treatments was quite astonishing. He became brisk and alert, and his manner was more normal than it had been for years. He even made some social effort and attended a dance. After the next treatment he suddenly relapsed and displayed quite typical symptoms of his excited phases. His course was continued, and steady further improvement occurred, but not to the level so briefly achieved. He became co-operative and attended the occupation department, and even obtained parole for a time, but speedily broke it.

During the ten months after having electro-narcosis, he maintained a consistently improved psychiatric state. He was odd in manner, showed great thinning of affect and was foolishly unreliable in behaviour, but these symptoms were all less intense than formerly. He did not show a single phase of excitement with hallucinosis. He worked quite usefully under supervision and was active socially if urged.

DURATION OF ILLNESS. He had been ill for just over three years when electro-narcosis was begun.

**Category 3. No 4.**

CASE 40 Male. Admitted 17.2.48. Age 23.

AETIOLOGY AND PSYCHOPATHOLOGY.

1) Family History. His mother was certified in 1934, and was still in a mental hospital at the time of his admission. No other relatives were known to have suffered from mental disorder, alcoholism or epilepsy.

2) Early History and Development. He was said to have suffered from "epileptic fits" during the first few years of life, but medical confirmation of the diagnosis was not available. Otherwise he was described as a "normal and intelligent boy and well-behaved". He was an average scholar, but after leaving school he drifted from job to job, grew increasingly detached and began to pilfer money from his relatives in order to be able to go to the cinema.

3) Temperament. Information is scanty, but he was solitary, asocial and unable to fend for himself while at school. He was extremely dependent on his elder brother.

4) Sexual Life. He never showed any interest in girls and was believed to have been a habitual masturbator even before his admission to hospital.

5) Summary of Causative Factors. Constitutional predisposition appeared to be the main cause of this man's mental disorder. His first breakdown seemed to start when his elder brother was called up for military service in 1941.

CLINICAL MANIFESTATIONS. He was first admitted to hospital under certificate on 19.5.42 with a history



of symptoms growing gradually more severe since December 1941. He was dull, detached, apathetic and indifferent to his environment and situation. His affective impairment was severe; he admitted without apparent interest, that he couldn't keep a job and that he pilfered from relatives. He said other people followed him in the streets, and that he could do any job if this sort of unfair treatment could be stopped. He was hallucinated for hearing and indifferent to social contacts.

During the four years and nine months he was in hospital his condition varied, often unpredictably and rapidly. Towards the end of his stay his phases of hallucinosis were accompanied by excitement and impulsive conduct, but he had periods of some weeks during which he was capable of simple routine work. His affective failure and thought disorder were not improved. He was discharged on 6.3.47. under Section 79, on the application of his father.

He was readmitted under certificate on 17.2.48 in an overactive phase similar to those noted earlier, with the addition of a degree of negativism and bizarre delusions of bodily change. He said his right hip was paralysed, which was not true. He also was convinced that bad blood in his gums was moving towards his brain which was already being pressed on by a sore on his nose.

DIAGNOSIS. When electronarcosis was started the diagnosis of schizophrenia was not in doubt. In spite of a phasic element and the negativistic episode noted above, he was regarded as predominantly a hebephrenic

type, owing to the prominence of hallucinations, mannerisms and mild impulsiveness, as well as the bizarre quality of his thought content. The history of pilfering indicated an admixture of psychopathy of the predominantly passive-inadequate type.

TREATMENT. On 7.4.48. he started a course of twelve treatments by electro-narcosis three times a week. In addition to atropin gr  $\frac{1}{60}$  subcutaneously, he received sodium amytal gr  $\frac{1}{\sqrt{1}}$  orally half-an-hour before his first four treatments. The frontal position of the electrodes was used. In spite of a coma dose of 150 mA he showed considerable restlessness at the fourth treatment. Nembutal gr  $4\frac{1}{2}$  was substituted for the sodium amytal on the next occasion, with little improvement. Before the sixth treatment he was given thiopentone 0.45 gm intravenously. He had a satisfactory narcosis with a coma-dose of 140 mA. This procedure was repeated successfully for the remaining six treatments.

RESULT. Immediately after his course of treatment he was brisker in all his reactions, showed more emotional power and a more normal manner. His hallucinations and ideas of bodily change had cleared up. He was more sociable and worked usefully on the farm.

Eight months after treatment was finished, the improvement was still apparent. He was capable of routine work and enjoyed the privilege of parole. The pattern of alternating phases of hallucinosis and relative stability had disappeared, and the picture was of slight progressive improvement.

## DURATION OF ILLNESS

In spite of a period at home from March 1947 to February 1948, his illness was not considered to have undergone a remission. The duration at the time treatment was started was therefore six years and five months.

## 1. Early History and Development.

He was always backward. When he left school he could read and write but not fluently. His school reports never suggested that he was sufficiently backward for special steps to be taken. As an agricultural worker he was exempt from military service. Most of his friends, however, went into the forces, so he had little companionship during the war years.

2. Personality. He was a simple and rather colorless boy and youth, who never did anything to make himself conspicuous.

3. Sexual Life. He never showed any special interest in girls. During adolescence he was apparently content to find solace in his own company.

4. Summary of Creative Factors. The main factors were his sexuality, his limited intellectual endowment and a fairly advanced schizophrenia. Whether by coincidence or not, his symptoms became more pronounced after the death of his only sister in 1941 about a year before admission to hospital. His breakdown started during the second year of his N.S. England, but he was not in a particularly distressed state.

Case 43. Male. Admitted 18.4.46. Age 23.

ARTIOLOGY AND PSYCHOPATHOLOGY.

- 1). Family History. He came of farm-labouring stock. His father and mother were alive and well; his paternal grandfather committed suicide and a paternal aunt was very eccentric. He had a brother of twelve at home.
- 2). Early History and Development. He was always backward. When he left school he could read and write but not fluently. His school reports never suggested that he was sufficiently backward for special steps to be taken. As an agricultural worker he was exempt from military service. Most of his friends, however, went into the forces, so he had little companionship during the war years.
- 3). Temperament. He was a simple and rather colourless boy and youth, who never did anything to make himself conspicuous.
- 4). Sexual Life. He never showed any special interest in girls. During adolescence he was apparently oafish in their company.
- 5). Summary of Causative Factors. The main factors were his heredity, his limited intellectual endowment and a lonely adolescence. Whether by coincidence or not, his symptoms became more pronounced after the death of his small sister of 4 $\frac{1}{2}$  about a year before his admission to hospital. His breakdown started during the rocket attack on S.E. England, but he was not in a seriously affected area.



CLINICAL MANIFESTATIONS. Early in 1942 he began to be unsettled and kept changing his job on trivial pretexts. After the death of his sister he kept complaining that he was being starved and was "falling away", though in fact he ate most of the family's rations. He said his bowels were never open and spent an hour in the lavatory after every meal. He developed a habit of following people about the house and imitating their every action, such as sneezing or coughing. Although he had a room of his own, he used to go into his young brother's room at nights, saying he was frightened to be alone. He kept at work; in view of the labour shortage his employers were very long-suffering, but by the beginning of 1946, his latest master was losing patience as he upset the other men. Finally he complained of hearing voices, the law was invoked and he was admitted to Barming Heath Hospital under certificate.

He was then dull, apathetic, morbidly preoccupied and without apparent interest in his environment. He had many frequent explosive outbursts of silly laughter. His thought content was vague and ill-defined. He was preoccupied with hallucinatory voices, male and female, which often shouted at him. He heard his mother's voice telling him to return home, but more often there was a jumble of voices talking nonsense. He showed no clouding of consciousness and no memory defect. He was quite indifferent to social activities and did no work. For a short time he showed slight improvement, but he soon relapsed into the same state as on admission, with

the addition of tendencies to mild impulsiveness and aggressive outbutsts.

DIAGNOSIS. Important physical factors were excluded by clinical and serological examination. His affective reactions and mental content showed no trace of depressive colouring. The diagnosis of schizophrenia of the hebephrenic type was not in doubt when treatment was started.

TREATMENT. He was given a course of twelve treatments by electro-narcosis, three times a week, starting on 9.4.48. He received atropin and sodium amytal pre-medication. The electrodes were placed frontally and the average coma dose was 150 mA. Nothing untoward occurred.

He had a second course of eighteen treatments, three times a week, starting on 7.6.48. He was given thiopentone before each treatment; the electrodes were placed frontally and the average coma dose was 150 mA. No difficulties were encountered.

RESULT. Following his first course he was considerably improved. He showed more interest in his environment and greater emotional power. He was beginning to be interested in social activities and was working quite usefully. The full extent of his improvement was not maintained so his second course was given. This had no positive beneficial effect, but may have stopped the retrograde trend which was manifest when it was given. Six months after treatment was finished he was still

working, and showed improved emotional power and interest in his environment.

DURATION OF ILLNESS. The history clearly indicates that this was rather more than three years at the time treatment was begun.

category 3. No 6.

CASE 44. Female. Admitted August 12th 1947. Age 26.

ETIOLOGY AND PSYCHOPATHOLOGY.

- 1) Family History. She came of rustic stock of the lowest social type apart from gypsies. There was no known history of mental disorder, but her people were furtive, suspicious and unintelligent.
- 2) Early history and development. Her parents and husband clearly wished to give nothing away about the patient's history in case it might incriminate her. She was backward at school and was probably a certifiable mental defective, but just escaped being regarded as ineducable. She was then in domestic service in various menial capacities until she married in 1942 at the age of twenty-one.
- 3) Temperament. She was dull, unintelligent and lacking in initiative, but was apparently capable of keeping herself clean and presentable when strictly supervised. She proved herself capable of simple routine jobs once they had been explained in detail. She could just read and write and had sufficient arithmetic to handle house-keeping money without too many mistakes.
- 4) Sexual Life. She showed little interest in boys or sexual activities, until she was more or less raped by her future husband. The necessary steps were taken to make an honest woman of her, and her first child was born in September 1943. Shortly afterwards she broke down for the first time.
- 5) Summary of Causative Factors. Her personality and intelligence were quite insufficient for her to adapt herself successfully in any environment calling for



initiative or independence. She was only capable of following a line marked out for her by someone else, and her first breakdown occurred as soon as ordinary adult responsibilities were thrust upon her. A toxic-infective-exhaustive element may have been present at that time, but was not operating at later periods.

CLINICAL MANIFESTATIONS. One week after her confinement on 10.9.43, she became sleepless, confused and rambling in speech. This condition gradually gave place to a state of stupor and she was admitted to hospital on 24.9.43 as a temporary patient. Her reaction was schizophrenic, rather than organic in type. She was often restless in an aimless way, and grinned or grimaced to herself for no apparent reason. Her affective responses were superficial and facile. She said she could hear eminent film stars broadcasting to her, and from time to time she shouted their names out in an inconsequent and pointless way. There was, however, some clouding of consciousness and defect of memory. She attended the occupational therapy department as soon as she could cooperate sufficiently, and soon responded to measures of rehabilitation. She was able to go home in February 1944, free from psychotic symptoms.

She was then able to look after her home and child after a fashion, until February 1945, with considerable help from her parents-in-law. She then had another schizophrenic episode very similar to the first, but without any obvious precipitating cause. She was also more excitable and noisy. On several occasions she smashed crockery and attacked nurses. The time required

for recovery was eleven months instead of five, and her state on leaving hospital was less satisfactory than on the first occasion. She only went home owing to pressure from her relatives and never resumed domestic duties or the care of her child. She slowly became more slovenly and careless and from time to time made unprovoked attacks on her husband.

She was then admitted to Barming Heath under certificate on 26.6.47. Her reception documents were later found to be irregular, so she was discharged and re-admitted on August 12th 1947.

She was again impulsive and given to giggling to herself for no apparent reason. Her apathy and emotional failure were severe, and she spent the day curled in an armchair, unless urged to occupy herself. Her mental content was so vague that its nature could hardly be established, but she frequently muttered to herself in answer to hallucinations. No further change occurred before electro-narcosis was instituted on 13.5.48.

DIAGNOSIS. Important organic factors were excluded by physical and serological investigations. As already stated, an organic element was probably present on the occasion of her first breakdown, but there was no evidence of anything similar on subsequent occasions. She never showed the elation, emotional drive, acceleration or distractibility of a manic patient, nor were her emotion reaction and mental content depressive at any time. The gross inactivity, rapid deterioration, preoccupation with hallucinations, silly laughter

and mild impulsiveness all indicated the neoeuprenic sub-type.

TREATMENT. She received twenty-four treatments by electro-narcosis, three times weekly, starting on 13.5.48. She received atropin and sodium amytal pre-medication. The electrodes were placed frontally and the average coma-dose was 130 mA. No difficulties were encountered.

RESULT. When her course was over she was more alert and interested in her environment. Her mannerisms were fewer and hallucinations were not evident. In fact, she showed no psychotic symptoms. In view of her history, however, it was clear that her poor personality and intelligence made life outside hospital a poor and unhappy proposition for her. Six months after treatment was over her improvement was still well maintained.

DURATION OF ILLNESS. She never achieved the level of social recovery after her 1945 breakdown. She had therefore been ill for three years and three months when electro-narcosis was started.

#### 2. Early History and Development. Birth and Infancy

were normal. No autistic traits were noticed in early childhood. She was brought up in a rather isolated rural district, but was quite bright at school. She was said to have been clever with a needle, and to

Category 3. No 7.

CASE 45. Female. Admitted 4/2/48. Age 16.

AETIOLOGY AND PSYCHOPATHOLOGY.

1). Family History. The patient's father died of tuberculous meningitis, when she was quite a child. He came back from the first World War suffering from tuberculosis of the lungs, and was a semi-invalid for many years before the fatal outcome. He was addicted to alcohol, and used to talk about the horrors he had seen during the war, without restraint of any kind. He also used to knock his wife about.

The mother was a comparatively young and good-looking woman who did not look robust, but nevertheless worked during the second war, and looked after two evacuated children as well as her own. She married again after her first husband's death. The step-father was kind to her family, although he had four children of his own. The patient never took to him, however; though not actively resentful, she appeared quite indifferent to him. There were two other girls in the family, one 7 years older than the patient. She had been in a mental hospital for two years, suffering from schizophrenia, when the patient became ill. The other sister was in domestic service. A maternal great-uncle and a cousin were also psychotic.

2). Early History and Development. Birth and infancy were normal. No neurotic traits were noticed in early childhood. She was brought up in a rather isolated rural district, but was quite bright at school. She was said to have been clever with a needle, and to



have displayed a modest talent for music. Her mother re-married when she was 11, and moved to a district of South-East London which suffered severely in the flying-bomb attacks. When the war was over the family moved out into the country again, to a spot much more isolated than the previous one. The patient was sent to a house in the next village to train for domestic service, but her employer died, and the job came to an end. She then got another domestic post, and while there developed symptoms of mental illness.

3). Temperament. She was a quiet, well-behaved girl, who never got into trouble. She had few friends, but was described as cheerful about the house and a habitual songster.

4). Sexual Life. She had no boy friends and was never a problem as regards her sexual behaviour. When admitted to hospital, there was a story that her relationship with her step-father was unhealthy, but careful investigation failed to produce an iota of proof.

5). Summary of causative Factors. There was almost certainly a degree of hereditary constitutional predisposition. She showed a somewhat schizoid disposition, which was probably strengthened by life in isolated places. She did not take kindly to flying-bombs, and later was very upset about her sister's illness. The patient used to visit her frequently, and was obviously distressed by the experience.

#### CLINICAL MANIFESTATIONS.

The first sign of anything amiss was noticed in July

1946, when she appeared unsettled at her work. She told her parents that she was trying to concentrate, but that she could not help dreaming a lot. The significance of this was not lost on the parents, in view of their experience with the elder sister. They removed her from work, and took her with them on their annual hop-picking holiday. She did not improve, and in October began to behave strangely. One day she went out, and was brought back three hours later by the police with her clothes torn and covered with bramble scratches. Her first admission to Barming Heath Hospital was then arranged.

At first she was in a state of acute excitement, with continuous, frenzied overactivity. She continually shouted and screamed, and tried to attack anyone who approached her. After a few days she became somewhat quieter, but was still very uncertain in conduct. She developed a tendency to self-exposure and her habits were at times faulty. She became increasingly manneristic and spent much time in conversation with hallucinatory voices. Three months after admission, the picture was typically hebephrenic. She was inert, indifferent to her surroundings, and preoccupied with hallucinatory experience. She was intensely manneristic and from time to time was mildly impulsive. Then spontaneous improvement began, and by August 1947 she was able to leave hospital, though still showing some flattening of affect and a tendency to mannerisms.

She did not return to work, but showed no

more acute symptoms of mental disorder until a few days before her second admission to hospital on 4/2/48. She became incoherent in speech and had frequent fits of causeless laughter. Then she became impulsive and aggressive, and could not be looked after at home.

Her condition was similar to that on her first admission, but with rather more resistiveness and negativism. The more acute symptoms again subsided quite quickly, and when electro-narcosis was begun, she was preoccupied with hallucinatory voices, intensely manneristic, and mildly impulsive. She showed great flattening of affect and was quite incapable of social activity or useful employment.

#### DIAGNOSIS.

This was not in doubt when electro-narcosis was started. At an earlier stage it was a matter of some difficulty to exclude mania, but she never showed any genuine elation or emotional power, nor was she accelerated mentally. She did not show heightened responsiveness to her environment, as in the form of distractibility, but was withdrawn from it, even in her periods of excitement. Physical and serological examination did not reveal anything significant. In spite of some katatonic symptoms, the picture for most of the time she was under observation was typically hebephrenic.

#### TREATMENT.

She was given a course of 18 treatments by electro-narcosis, three times weekly, starting on 13/5/48.

Category 3. No 8.  
She received atropin and sodium amytal pre-medication. The electrodes were placed frontally and the average coma-dose was 125mA. No difficulties were encountered.

#### RESULT.

At the end of her course of treatment she was considerably brighter and more interested in her surroundings. Her mannerisms were less marked, and her pre-occupation with hallucinations less complete. She was beginning to make social efforts and was doing a little work. Then she had a short phase of excitement and overactivity, in which her habits were once again faulty, and she frequently stripped herself. When that was over, a slow but steady improvement started. She became pleasant in manner, willing to work and sufficiently stable to spend short periods of leave at home. There was, however, severe affective flattening, and she was obviously dependent on a favourable therapeutic environment to prevent regression. She was therefore not considered well enough to go home, although her improvement had been maintained when her case was reviewed 7 months after electro-narcosis was finished.

#### DURATION OF ILLNESS.

Computing this from the second onset of acute symptoms, she had been ill for just over 3 months when electro-narcosis was begun.



Category 3. No 8.

Case 53. Male. Admitted 8.8.45. Age 29.

AETIOLOGY AND PSYCHOPATHOLOGY.

1). Family History. The family consisted of the patient and his twin sister. Their father was shell-shocked in the first world war; he afterwards suffered from attacks of depression and committed suicide when the twins were twelve. Their own mother had previously died of influenza when they were two. When their father re-married, the step-mother had little affection for them. She already had one child of her own, and another was born of this second marriage. A maternal aunt had been in a mental hospital for 28 years.

2). Early History and Development. His childhood was unsettled owing to the deaths of his parents. He attended elementary school and was of average attainments. After his father died he lived with aunts and uncles until he volunteered for the R.A.F. in 1941. Previous to that he had been working for an engineering firm.

3). Temperament. He was described as being quiet, charming and gentle, fond of his sister's children and liked by them. From an early age he was easily discouraged and put off by failure. He also had a habit of dropping out of social activities at the last minute.

4). Sexual Life. He was reserved and shy with girls. In 1940-1 he had a girl friend for a time. She was his cousin's girl before becoming friendly with the patient, and in 1941 she married the cousin.

5). Summary of Causative Factors. A constitutional

heredity element was clearly present, reinforced by unfortunate early developmental factors. The schizoid trends in his personality were clearly marked. He was disappointed at being refused by the R.A.F. and was further upset when his girl friend left him. These were the actual precipitating factors of his first breakdown.

CLINICAL MANIFESTATIONS. After an indefinite period of oddity of manner, inability to concentrate and inefficiency at work, he entered a mental hospital as a voluntary patient on 15.4.42. and remained there until 11.3.44. He expressed many bizarre hypochondriacal ideas; he complained of "inside things standing out in bristles" and believed something strange was wrong with his rectum and anus. He had a short course of E.C.T. For a time he was improved, but later complained of being subjected to radio-activity and of becoming a subject of debate by other people. He said he was involved in "telepathic understandings and livid shutter effects". By the time he left hospital he was much improved. He went to live with his sister and worked in a desultory way as a gardener to a neighbour. He was not kept to regular hours, and had no insurance card.

In March 1945 he became careless about his personal appearance, stayed away from work more frequently, and roamed around the streets until the neighbours complained about him. He had frequent outbreaks of temper, said he was being pursued by burglars and murderers and that he had been visited by the King. He was admitted to

Barming Heath Hospital under certificate in 8.8.45.

He then showed thinning of affect, indifference to his environment and oddity of manner. He thought other people were whispering and talking about him, and believed he was accused of murder. He complained that at nights he was constantly disturbed by the voice of a man named Kruger. For about eight months he showed some improvement; he worked on the farm and voiced his delusions much less freely. He then began to deteriorate once more. By the time he was considered for electro-narcosis he showed severe affective failure. He believed he was the centre of strange psychic influences but his thought content was so vague that his delusional ideas lacked all clarity. His speech was inconsequent, telegraphic and neologistic. He was, on rare occasions, noisy and impulsive.

DIAGNOSIS. Important physical factors were eliminated by clinical and serological examinations. The diagnosis was not in doubt at the time treatment was arranged. He showed both hebephrenic and paranoid features, but as the latter appeared later and disappeared earlier than the former, he was regarded as predominantly hebephrenic.

TREATMENT. He received two electro-narcosis treatments only, on 14th and 18th May 1948. The electrodes were placed frontally and the coma-dose was 145 mA on the first occasion and 140 mA on the second. He received atropin and sodium amytal pre-medication. After the second treatment he complained of severe pain in the

dorsal region. X ray revealed a fracture of the tip of the right articular process of the eighth dorsal vertebra. This healed well without immobilisation. He almost certainly retained some memory of the treatment, although he denied doing so. It should be emphasised that the glissando technique was used in this case.

RESULT. He showed considerable improvement after his two treatments. His interest in his environment increased. He showed improved quality and output at work and was distinctly more sociable. His thought content remained vague and his ideas of psychic interference persisted. Six months after his fracture, the possibility of continuing his treatment was considered, using thio-pentone and curare. He was clearly apprehensive of further treatment. After taking the views of the nursing staff, I came to the conclusion that in this case fear of a repetition of the experience of electro-narcosis was a potent motive in causing the patient to work and act in a way likely to be approved of by the medical and nursing staff. This was so undesirable that the patient was immediately assured that he would be given no further treatment without his own full consent.

DURATION OF ILLNESS. The history clearly indicated a duration of three years and two months when treatment was started.



Category 3. No 9.

CASE 58. Female. Admitted 3.5.48. Age 23.

AETIOLOGY AND PSYCHOPATHOLOGY.

1) Family History. The father was a regular soldier who had risen to a senior rank by the end of the war. He was an active, energetic man and a good mixer. His wife, by contrast, was gentle and retiring; as a girl she was extremely reserved, but gradually altered in this respect as she grew older. The family consisted of the patient and her younger brother of 20, a cheerful and extraverted subaltern. There was a good deal of friction between the parents, who spent long periods apart, ostensibly owing to the exigencies of service life. There was no history of mental or nervous disorder.

2) Early History and Development. She was a beautiful baby and grew into a healthy child, but was never active. She soon tired of playing with her toys and sat about doing nothing. She was educated mainly in India, being at boarding school during the war, and afterwards with her father. The education in India was apparently designed to produce ladies of leisure, and did not fit the patient to compete with other girls in England, especially as she was not very clever.

When she came home shortly after the war she joined the A.T.S. She had been keen to do so for some time. Although she was supposed to have learned typing in India, she could not pass the Army test, and was turned on to floor-scrubbing. This was a severe shock to her; fortunately a welfare officer became interested and

found her a job as filing clerk, which she held until admitted to a military mental hospital in October 1946.

3) Temperament. From an early age she was reserved, lacking in energy and inclined to be obstinate. She had a quick temper which, however, was soon over. During adolescence she was very scrupulous about her personal appearance. While in India her father had to call a halt to her expenditure on clothes. After her brother became engaged, he ceased to take her out and she stayed at home too much. According to her grandmother, she showed a rather excessive interest in religion for a considerable time before she broke down, and spent a lot of time reading tracts.

4) Sexual Life. She showed no interest in men and expressed disgust at many she met in the Army. She was horrified in the A.T.S. by the other girls' accounts of their sexual adventures.

5) Summary of Causative Factors. She obviously showed schizoid personality traits from an early age. Possibly as a result of the disharmony between her parents she grew up with an attitude to men unfavourable to marriage. Her schooling failed to give her a training good enough to enable her to make good in a job. After her illness developed, any reference to her future caused annoyance and she left the room. She apparently felt there was no niche into which she could fit, and as a result progressively lost touch with reality.

CLINICAL MANIFESTATIONS. In October 1946 she became

strange in manner and said people were staring at her wherever she went. She was sent into hospital, but escaped and returned to her unit in an excited state, clad in her pyjamas and an overcoat. She was then admitted to a military mental hospital. She there shewed affective thinning and said she felt as if she were fading away. She said that before admission she had been given injections every night while she was asleep, and that all the girls united to prevent her from sleeping. She admitted hearing voices, and said that her mind was controlled from outside herself. A diagnosis of schizophrenia was made and she was given first E.C.T., then insulin shock treatment. She improved somewhat but her father took her out before she was well. He was stationed in Germany at the time. Out there, the patient had frequent phases of refusing food and talking "drivel". She was indifferent to her appearance and refused to meet anyone except her family; she rushed off to her room at once if guests arrived. It became impossible to keep her in Germany, so she was brought home and admitted to Barming Heath hospital.

At first she was in a state of stupor, with considerable resistiveness and negativism, especially over feeding and dressing. After a few days she began to talk; she said her mother was a horse, that she was pursued by murderers, and persecuted by electrical rays. On several occasions she was observed lying in bed uttering obscene words in a dispassionate way for an hour or more at a time. She showed flattening of affect, silly explosive laughter,

and preoccupation with hallucinatory experience. Owing to the length of her history and the full reports available from the military hospital, electro-narcosis was started only ten days after admission.

DIAGNOSIS. Clinical and serological examinations revealed nothing significant. The diagnosis was not in doubt at the time of her admission. Neither her affective reaction nor her mental content was depressive. The determination of her sub-type was not so easy. Paranoid and katatonic elements had both occurred, but the outstanding features of her case were hebephrenic. She showed rapid regression to an inactive state, with florid mannerisms, preoccupation with hallucinations and mild impulsiveness. Her thought content was very bizarre.

TREATMENT. She was given 36 treatments by electro-narcosis three times weekly, starting on 13.5.48. As she was very apprehensive of electricity in any form she was given thiopentone before her first treatment. Possibly owing to her previous course of insulin shock, her veins were very difficult to use for injections. She therefore was given 0.5 gramme Nembutal intramuscularly before her next eight treatments. This was not altogether satisfactory, as the re-establishment of respiration was a slow and laborious process. In spite of the difficulties, intravenous thiopentone was resumed. The electrodes were placed frontally and the average coma-dose was 150 mA. No other difficulties were encountered.



RESULT. Improvement in her case was slow and not very great, but such as it was it occurred, and was well maintained. She showed a greater interest in her appearance and surroundings, and conversed more freely in a simple way. She became just accessible to rehabilitation measures, working at simple jobs if urged and supervised. The bizarre element in her thought content disappeared and proof of hallucinations could not be obtained. She still showed profound affective failure and at the slightest stress became mute, resistive and negativistic. This degree of improvement was still noticeable five months after treatment was finished, by which time she had been granted day leave in the care of her parents.

DURATION OF ILLNESS. The history showed that symptoms were first noticed about a month before her admission to the military mental hospital. When electro-narcosis was started she had therefore been ill for one year and eight months.

She was not actively solitary, but showed no social initiative. She did not resist being drawn in to village activities, but rather passively accepted the role of domestic daughter. The undoubted convenience of this arrangement to the more active members of the family may have rather biased their view of her character. She was, apparently, a rather placid and negative girl, but a hard worker, and very conscientious. She was well liked in her village, and had a great fear of illness and

AETIOLOGY AND PSYCHOPATHOLOGY.

1). Family History. The patient's father and mother were normal, healthy country-folk, nearing their eighties. There were seven children, of whom the patient was the sixth. She had one younger sister living at home, but all the others were married. There was no history of mental or nervous disorder.

2). Early History and Development. Her infancy and early life were uneventful. She attended the village school and was an average scholar. Afterwards she came to be accepted as the "Home daughter", but as her parents were hale, she undertook daily domestic work in the village. She had been in one post 9 years at the time she became ill.

3). Temperament. The first picture of her, given by the other members of the family was of a sociable, active girl, with nothing to suggest any predisposition to mental illness. Careful enquiry, however, showed that she was largely carried along by the predominant influences in her environment. She was not actively solitary, but showed no social initiative. She did not resist being drawn in to village activities, but rather passively accepted the role of domestic daughter. The undoubted convenience of this arrangement to the more active members of the family may have rather biassed their view of its wholesomeness. She was, apparently, a rather placid and negative girl, but a hard worker, and very conscientious. She was seldom ill, but had a great fear of illness and

hospitals.

4). Sexual Life. She showed little interest in men until she fell in love with a Canadian soldier in 1942. He deserted her, and left her with an illegitimate son, born in 1943. The boy was accepted by the family, and the household consisted of the patient, her parents, her younger sister, and her son. Her parents helped with the youngster, so the patient was able to continue at work.

5). Summary of Causative Factors. Her personality was much more schizoid than appeared on the surface. Although the even tenor of life appeared little disturbed by the birth of her son, she felt the matter much more keenly than her family suspected. Not only was there the emotional trauma of the desertion of her lover, but she felt debarred from achieving the position and regard which fell to other members of the family. Her actual breakdown occurred after her admission to a general hospital, for a condition which may have been psychogenic, but was not thought to be at the time.

#### CLINICAL MANIFESTATIONS.

She was admitted to a general hospital on 15/3/48 for the investigation and treatment of a pain in her side which had persisted for three weeks after an attack of mumps. This rapidly cleared up, so it was never known whether the pain was psychogenic, or due to ovarian involvement after mumps.

Soon after admission, however, she became strangely excited and suspicious in manner, and told her relatives that the ward sister was reading her private letters and revealing the contents to other patients. As a result, there was a continual scandalous discussion going on about her private affairs.

A psychiatric opinion was obtained. As the illness then appeared to have no antecedents, and as the patient had been receiving cannabis indica for therapeutic reasons, it was felt that she might be suffering from an artificially induced psychosis. The drug was stopped and further observation suggested. Her condition grew worse, however. Her speech became incoherent, and her delusions more prominent. She was obviously hallucinated and her general attitude of suspicion and lack of co-operation became more pronounced. She was accordingly admitted to Barming Heath Hospital on 3/5/48.

Deterioration continued rapidly. She showed profound apathy and indifference to her environment. Affective failure was severe. Her delusions were unchanged, and she became progressively more preoccupied with hallucinatory experience. She became manneristic, and her speech was at times so incoherent as to be barely intelligible. She made no effort to establish social contacts, and was incapable of useful occupation. No spontaneous improvement occurred up to the time when electro-narcosis was started.



## DIAGNOSIS.

Physical and serological examination revealed nothing significant. The possibility of a drug psychosis was eliminated by withdrawal of the drug. The only other possibility requiring serious consideration was a depressive psychosis, but her emotional reactions and mental content were in no way characteristic. The picture was typically schizophrenic. Owing to the persistence of her paranoid ideas, and her vaguely suspicious and resentful attitude, she was regarded as being of the paranoid type.

## TREATMENT.

She was given 6 treatments by electro-narcosis, three times weekly, starting on 15/6/48. She received thio-pentone and atropin pre-medication. The electrodes were placed frontally, and the average coma dose was 130 mA.

## RESULT.

Three days after her last treatment she was noticed to have a considerable swelling of the thyroid gland. On the following day this had increased to a diffuse enlargement, 3 inches by  $2\frac{1}{2}$  inches. It was tense on palpation and very tender. There were no other glandular enlargements. The condition subsided in 10 days, and no lasting ill-effect was observed. The nature of the swelling was a mystery. The most likely explanation was a haemorrhage into a small adenoma. In that case, however, the swelling would probably have been predominantly one-sided, which was not the case. In

view of the doubt as to what had happened, further treatment was reluctantly cancelled. She had made considerable progress mentally. She was much brighter and more interested in her environment. Her paranoid ideas were still present, but she was amiable and co-operative, instead of being suspicious and resentful. She joined in social activities and worked usefully in the occupation department. The degree of improvement shown at the end of her course of treatment was not fully maintained, but 7 months after it was over she had by no means slipped back to the state she was in before electro-narcosis was instituted.

#### DURATION OF ILLNESS.

The first clear evidence of schizophrenic symptoms was obtained just under 3 months before electro-narcosis was begun.

4). Sexual Life. He never showed any interest in girls at all.

5). History of Creative Interest. He clearly showed no creative interest from an early age, but there is nothing to suggest that he was ever particularly interested in anything. No doubt four years of travelling were unfavorable to a creative young man.

CASE 65. Male. Admitted 19.5.48. Age 28.

AETIOLOGY AND PSYCHOPATHOLOGY.

- 1). Family History. He came of a working-class family; both parents were alive and well. The patient was the second youngest of a family of six, the others all being normal. There was no history of mental disorder in the family.
- 2). Early History and Development. His infancy and boyhood were normal. He was bright at school, and achieved the top standard at his elementary school. His teacher wanted him to sit for an examination at Chatham dockyard, but this idea was turned down. He worked as a painter and decorator until just before the war when he joined the army. He served for seven years for four of which he was engaged on a tunnelling job in Gibraltar. After demobilisation at the end of 1945, he resumed his work as painter and decorator.
- 3). Temperament. From an early age he was reserved and had few friends. His main relaxation was cycling with one other particular boy. He was very methodical and conscientious; his habits were abstemious.
- 4). Sexual Life. He never showed any interest in girls at all.
- 5). Summary of Causative Factors. He clearly showed schizoid tendencies from an early age, but there is nothing to show how these arose. No doubt four years of tunnelling were unfavourable to a schizoid young man, but

he settled down to civilian life tolerably well. No definite precipitating factor was discovered, but his people were most unobservant and careless in their dealings with him. They allowed him to deteriorate at home for a year after a psychiatric opinion had been obtained, advising urgent action.

CLINICAL MANIFESTATIONS. Early in June 1947 he marched into his parents' room one night and asked the question "What are they saying about me?" It transpired that for some time he had heard voices at night. His employers had noticed nothing abnormal and he continued to eat well and look after himself. For a few days he accepted his father's reassurance that "it was all imagination", but then returned to his conviction that people were talking about him. He wouldn't go out any more, and spent the next year sitting about at home, and occasionally tinkering with an old motor cycle engine.

As he was clearly deteriorating, he was admitted to Barming Heath Hospital as a voluntary patient in May 1948. He then showed indifference to his environment and profound affective failure. He was strange in manner and his thought processes were dominated by vivid hallucinations of mocking spirit voices. He believed his mind was being read by other people and also that he was a common topic of conversation in his home town. He showed no trace of resentment in his emotional reaction, and was never impulsive or unpleasant in his habits. He showed no interest whatever in social activities and was only



capable of very simple routine work under supervision. He showed no improvement before being given electro-narcosis.

DIAGNOSIS. Physical and serological examination failed to show anything significant. The only alternative to schizophrenia was a depressive psychosis. The fact that he heard "mocking spirit voices" carried a suggestion of a depressive colouring, but his emotional reaction was not depressive, nor was he retarded. The preoccupation with hallucinations and inertia indicated schizophrenia of the hebephrenic type.

TREATMENT. He was given thirty-three treatments by electro-narcosis, three times weekly, starting on 7.6.48. Apart from his first treatment he received atropin and thoipentone premedication. The electrodes were placed frontally and the average coma dose was 160mA. No difficulties were encountered.

RESULT. He showed slow and slight improvement during the course of his treatment. By the end he was brisker and more interested in his surroundings. He worked on the farm, mixed with other patients and attended entertainments. His hallucinations were still present, but he was much less engrossed in them. His ideas of passivity and influence cleared up and he no longer believed people were talking about him. A long period of occupational therapy and rehabilitation might have helped him greatly, but unfortunately he left hospital

prematurely under pressure from his relatives. He was undoubtedly improved, but could not be regarded as a social recovery.

DURATION OF ILLNESS. Evidence of abnormality was first available just over a year before electro-narcosis was begun. That figure was accepted, although it was difficult to believe that it represented the true duration.

always a wine. The patient had three elder brothers, an engineer of promise, an officer in the merchant navy with a good record and a doctor.

Early history and development. The whole family had a happy childhood. The father was master of a large estate in Scotland. When he died, money was short for a time but the elder boys were barristers and undertakes to enable them to complete their university education. By the time the patient was at the university, the financial situation was easier. He studied medicine and for two years did well. Then his work began to deteriorate, and in 1942, having failed his final examination three times, he joined the Navy as a sick-berth steward. Not long afterwards, while still in the service, he managed to qualify, thereby presenting the Navy with the problem of what to do with a qualified doctor as a sick-berth steward. Having regard to all the circumstances, he was allowed to leave the service. He then spent his time working as house officer and lesson teacher, until more serious symptoms ended his professional career.

CASE 68. Male. Admitted 19.6.48. Age 29

AETIOLOGY AND PSYCHOPATHOLOGY.

1) Family History. There was no family history of mental disorder. The father died in 1929, but the mother was still alive, a very fussy woman, whose interventions in her son's affairs were nearly always unwise. The patient had three elder brothers, an engineer of promise, an officer in the merchant navy with a good record and a doctor.

2) Early history and development. The whole family had a happy childhood. The father was factor of a large estate in Scotland. When he died, money was short for a time but the elder boys won bursaries and scholarships to enable them to complete their university education. By the time the patient was at the university, the financial situation was easier. He studied medicine and for two years did well. Then his work began to deteriorate, and in 1942, having failed his final examination three times, he joined the Navy as a sick-berth steward. Not long afterwards, while still in the service, he managed to qualify, thereby presenting the Navy with the problem of what to do with a qualified doctor as a sick-berth steward. Having regard to all the circumstances, he was allowed to leave the service. He then spent his time working as house officer and locum tenens, until more serious symptoms ended his professional career.

3) Temperament. He was described as quiet but not solitary, good with his hands, and meticulous over detail.

4) Sexual life. He never showed any interest in girls and was shy and reserved in their company.

5) Summary of Causative Factors. In spite of intelligent witnesses, a really adequate picture of the genesis of his illness was never formed. He was the youngest son of a foolish and indulgent mother, who was left a widow rather young. The elder brothers obviously set a high standard of hard work, intelligence and self-reliance, which was perhaps beyond the powers of the patient, who nevertheless could accept nothing lower. These explanations, however, appear very partial when the crippling severity of his psychosis is considered.

CLINICAL MANIFESTATIONS. He began to show a gradual deterioration in his work in 1939-40, when he was a third year medical student. He consulted the professor of psychiatry at his university, complaining of inability to concentrate. Since then he has become progressively worse, with slowly increasing inertia, lack of concentration, lack of persistence of effort, and finally seriously diminished interest in his environment. He surprised everyone when he qualified. His medical work afterwards was of a very low standard, which was only tolerated because any kind of young doctor was



at a premium in civilian life at that stage of the war. In 1947 his performance at work became quite hopeless and he was obviously hallucinated. He went to a private mental hospital as a voluntary patient, but refused all treatment, so had to be certified. He had a short course of E.C.T. which he disliked very much, followed by insulin shock. He improved, inasmuch as he was no longer hallucinated. Vague ideas that he was being spied on also cleared up. However, when he went home to the care of his brother in May 1948, he sat about all day and made no effort to occupy himself. He was admitted to Barming Heath as a voluntary patient on 27.5.48, but took his departure against advice almost immediately. He was re-admitted under certificate on 19.6.48.

He then showed indifference to his appearance and environment, with severe thinning of affect and incongruity between his emotional reactions and the current of spoken thought. He was odd in manner, often grinning and grimacing for no apparent reason. He was convinced that he could influence the conduct of birds and animals by his own thought power. He complained of being followed everywhere by strange psychic influences which could pass through walls. These made his own thoughts "ring louder in his ears", and resulted in his mind and conduct being controlled by the thought power of others. In his view they were trying to teach him manners. He

therapy department. He was unsociable, resentful in a pallid way to doctors, nurses and other patients, and quite incapable of occupation.

DIAGNOSIS. Important physical factors were excluded by clinical and serological investigations. Serious questioning of the diagnosis of schizophrenia was impossible, but as a matter of form, the possibility of a depressive illness was considered and dismissed owing to the absence of depression or any suggestion of depressive content. The persistence of his ideas of reference and his residual resentment indicated a predominantly paranoid subtype.

TREATMENT. He was given twenty-nine electro-narcosis treatments, starting on 28.6.48., three times a week. For the first five treatments he had sodium amytal and atropin premedication only, but subsequently was given thiopentone. The electrodes were placed frontally and the average coma-dose was 155 mA. No difficulties occurred.

RESULT. He made some slow progress during his course of electronarcosis. When it was over he showed greater interest in his environment, more initiative, and greater capacity for emotional response. His thought disorder was less prominent, but he still believed in "thought-power" in a detached impersonal way. He was, however, interested in social activities and attended the occupational

therapy department. His improvement was still noticeable to the same degree four months after the end of treatment, but he was not considered well enough to leave hospital.

DURATION OF ILLNESS. This was reckoned to be approximately eight years.

3) Early History and Development. Her mother was born in 1890 and was the only child of a family of seven children. She was given a very strict upbringing by her grandparents. When they died she was sent to a boarding school and then to a convent where she worked as a children's nurse. Later she lived with her mother in a small town. She married in 1915 and lived in an upper working-class household. She was the only child. There was no family history of mental or nervous disorder.

4) Early History and Development. Her mother was born in 1890 and was the only child of a family of seven children. She was given a very strict upbringing by her grandparents. When they died she was sent to a boarding school and then to a convent where she worked as a children's nurse. Later she lived with her mother in a small town. She married in 1915 and lived in an upper working-class household. She was the only child. There was no family history of mental or nervous disorder.

5) Temperament. She was bright, cheerful and a good mixer. She mixed well with the other children, but

Category 3. No 13.

CASE 76. Female. Admitted 16.3.45. Age 32.

AETIOLOGY AND PSYCHOPATHOLOGY.

- 1) Family History. The father died of tuberculosis when the patient was seventeen. He was an invalid for several years before; he was a home-loving man, quiet, reserved and disinclined to mix with others. The mother was a reticent woman with a rather curious manner due to a facial tic. She came from the Channel Islands, where she was given a very expensive education by her grandparents. When they died she was suddenly removed from her school circle and had to earn her living as a children's nurse. Later she became Nanny and governess to a General's family, and travelled a great deal. When she married she never became really at home in upper working-class surroundings. The patient was an only child. There was no family history of mental or nervous disorder.
- 2) Early History and Development. Her early childhood was uneventful. She went to a convent school and did well. At fifteen she went to a commercial college, after which she worked first in a Solicitor's Office and then in a Shipping Company. Next she joined the W.R.N.S., in which she continued to do office work. She was stationed at a Naval base in her home town, so was able to continue living at home. In 1941 she was invalided from the Service owing to tuberculosis of the lungs, which became arrested after a spell in a sanatorium. She then lived at home, doing no work, until her breakdown.
- 3) Temperament. She was bright, cheerful and a good talker. She mixed well when she got the chance, which



was rather seldom, owing to her mother's attitude of spurning friendship with people of artisan class. The patient developed an intense dislike of anything "rough or vulgar", and displayed a rather mincing and spurious refinement. She was a dutiful daughter and cheerfully denied herself pleasures for the upkeep of the home. She was not unduly religious, but occasionally attended a church or chapel. It seemed probable that she was sensitive to criticism and inclined to be resentful of it.

4) Sexual Life. She enjoyed masculine society and would have liked to marry. When she got tuberculosis, however, she felt this was out of the question, and resigned herself as best she could to a life of spinsterhood.

5) Summary of Causative Factors. Developmental factors appeared important in her case. She derived from her mother a habit of wanting something better socially than she had got. This and her spurious air of refinement made her a conspicuously peculiar person. Quite apart from lack of social opportunity she undoubtedly put people off. Tuberculosis certainly confirmed her trend away from social adaptation and her renunciation of marriage accelerated the process. The physical effects of the disease were probably not negligible. The final factor was unwise pressure by a priest on a lonely girl.

CLINICAL MANIFESTATIONS. In January 1945 the patient's mother mentioned to a shopkeeper that the patient had been educated in a convent. The information was passed

on to a priest, who called and gave the patient a book called "The Psychology of the Soul". She soon afterwards accused her mother of failing to bring her up in the Catholic faith and so putting her in danger of hell. The priest's visits caused her great fear, and she soon accused the Catholics of listening in through microphones in the basement. She would not have the windows open in case the Catholics got in. Then, one day, she announced she was dead, and steps were taken to get her into hospital.

After admission to Barming Heath Hospital she showed herself morbidly pre-occupied and indifferent to her surroundings, though occasionally she rushed impulsively down the ward. She showed some thinning of affect and incongruity between her emotional reactions and the current of spoken thought. Her speech was disconnected and incoherent, and she told a long story of persecution by the Catholics, on the lines already described. She believed they could influence her mind from a distance and control her behaviour. She was correctly oriented and showed no defect of memory.

As time went on, impulsive overactivity became a more prominent feature of the clinical picture. In these phases she was destructive and aggressive and shouted abuse either in answer to hallucinatory voices or at any convenient bystander. Her delusions about the Catholics persisted, however, and progressive failure of affective power became apparent. Her speech became more disconnected and incoherent, and her thought content grew very vague and ill-defined. She was unsociable and unfriendly and would do little useful work.

DIAGNOSIS. Physical examination revealed no important factors. Her Blood Wassermann and Kahn reactions were negative. She had been in hospital for over three years before electro-narcosis was considered, so duration alone ruled out an organic psychosis of toxic origin. The absence of elation, acceleration and heightened response to her environment eliminated mania. The picture was clearly schizophrenic with paranoid and katatonic features. The former were perhaps more persistent, so she was regarded as a predominantly paranoid type, especially in view of the persistent attitude of hostility.

TREATMENT. Before electronarcosis was begun she had three clinical, radiographic and laboratory examinations at monthly intervals. X rays showed a few old calcified foci in both upper zones, with no shadows to suggest active disease. Clinically nothing abnormal could be detected. Tubercle bacilli could not be found, and her erythrocyte sedimentation rate showed 6 mm of fall in two hours by Westergren's method.

She was given twenty-nine treatments by electro-narcosis, three times weekly, starting on 10.8.48. She received thiopentone and atropin premedication. For the first twenty-one treatments the electrodes were placed frontally and the average coma-dose was 130 mA. For the remaining eight treatments the electrodes were placed frontally but moved temporally during treatment. The average coma dose was then 115 mA. No difficulties were encountered.

Her tuberculosis was not re-activated as a result of treatment.

RESULT. When treatment was over she was much more co-operative than formerly, and her attitude of hostility and resentment had disappeared. Her former wild excitement had toned down, but her conduct was erratic and unpredictable. She showed severe affective failure and a superficial facility of response. Her speech was disconnected and incoherent, and her thought content was vague and amorphous, but there was no evidence of her former delusions about the Catholics and she denied being hallucinated. She became accessible to occupational therapy and rehabilitation.

Three months after her course of electro-narcosis she was still erratic, unreliable and incoherent in speech. She was, however, much more amiable and was capable of useful work. She also mixed with other patients and enjoyed dances and social occasions. She was not well enough for discharge from hospital to be recommended.

DURATION OF ILLNESS. She had been ill for three years and eight months when electro-narcosis was begun.



CASE 81. Male. Admitted 19.5.48. Age 25.

AETIOLOGY AND PSYCHOPATHOLOGY.

1). Family History. There was no family history of mental or nervous disorder. The father was a quiet moody man, who was said to have idolised the patient when small, and later to have shown no interest in him. The mother was not a very strong character and not particularly intelligent. The patient had a sister nine years younger, of whom he was intensely jealous, and a brother three years younger still.

2) Early History and Development. He was a beautiful baby, "the talk of the place". He walked and talked at the usual times and became a complete chatterbox. He had temper tantrums and was given way to by both parents but especially by his father. He found school discipline very hard and was away a good deal owing to illness. He was of average attainments and did not get a scholarship. He was then entered as an apprentice engineer in the firm at which his father worked as cashier. By paying a sum of money within his means the father could have entered the boy as a pupil engineer; he would have had a better social status, time off to attend technical classes, and a more systematic training in the different shops. The boy never forgave his father for this, but considering the eventual outcome, the father may have been quite right not to sink his capital in that way. The boy attended evening classes for a year, but gave that up and took no exams. He continued at work without much hope of promotion.

During the war years he was reserved, and later accepted a direction to stay where he was rather than be conscripted as a miner.

3). Temperament. His early childhood was happy. He had all the toys he wanted and usually got his own way, otherwise there was a "scene". He resented his sister from the first and was jealous of her. He lacked perseverance and gave anything up the moment it became difficult. Since leaving school he showed little sociability or enthusiasm and blamed his father or favouritism at the works for his failure to get on.

4). Sexual Life. He never had any definite girl friends, but was very fond of a cousin slightly younger than himself. She married in 1944 and subsequently ignored him, a fact which upset him a great deal. In adolescence he was much upset by nocturnal emissions, and about sixteen developed the habit of masturbation. His mother knew about this, but didn't know what to do about it. She felt that he was very worried about sex and thought his father should have given him some instruction, which he did not do.

5). Summary of Causative Factors. The developmental situation appeared to be of primary importance. It seemed clear that up till the age of nine he had been indulged, and was then "left flat". It was not until adolescence that his schizoid traits became well-marked; nothing was done to encourage him to overcome those defects in his personality which were largely the result of early spoiling, notably giving up at the first difficulty. His later worries about sex were probably

important contributory elements, together with his general dislike of his job which, to do him justice, he was not free to leave.

CLINICAL MANIFESTATIONS. When 16 years old he went for a week's holiday to relatives in Wales. He stayed there three weeks, although this upset plans for a seaside holiday with his parents. When he came home he looked thin, his hair fell out and he seemed to brood. He also complained of nocturnal emissions and had dreams, His physical condition improved but he remained very quiet and apathetic for a long time. In fact, he never really showed any vitality or drive afterwards.

In November, 1946 he stopped work as he complained that it was too much for him. He was dull, apathetic and anergic. As he was no better by February, 1947 he was given 10 out-patient E.C.T. treatments at the psychiatric department of a London teaching hospital. He was no better, so was admitted to a neurosis hospital, where he was given insulin shock treatment. For a short time he showed some improvement, but three weeks after returning home in September, 1947 he was back where he started from. He sat about all day at home doing nothing, displaying outbursts of rage from time to time. He used to wake the household at 1.0 a.m. and demand articles of food they hadn't got. One day in May 1948, when his mother refused to take him out on account of his eccentric behaviour, he punched her

face and drew blood. Arrangements were therefore made for his admission to Barming Heath Hospital under certificate on 19.5.48.

On examination he was detached, inert and indifferent to his situation. He showed very severe affective failure, and made no social effort at all. He was incapable of useful work and required care and supervision to prevent self-neglect. His speech was laconic and often irrelevant, but there was no clear evidence of delusions or hallucinations. He occasionally grinned inanely, but never showed strong manneristic tendencies. He showed no improvement in his mental state before being given electro-narcosis.

DIAGNOSIS. Physical and serological investigations revealed nothing significant. There was at no time any depressive emotional reaction or mental content. The picture was typical of schizophrenia and the absence of mental content indicated the simple type.

TREATMENT. He was given 23 treatments by electro-narcosis approximately three times a week, starting on 16.8.48. Perhaps owing to his previous treatment in an insulin unit where routine intravenous interruption of coma was carried out, his veins presented great difficulties in administering thiopentone intravenously. With occasional failures, he was given intravenous thiopentone before his first 18 treatments, After that he was given either rectal paraldehyde or rectal



Category 3. No 15.  
thiopentone, reinforced by a small inhalation of ethyl chloride. Rectal thiopentone was more effective than paraldehyde. On one occasion with the latter drug, treatment had to be stopped after three minutes as the patient became restless. Otherwise no difficulties were encountered. The electrodes were placed frontally, and the average coma-dose was 135 MA.

RESULT. He slowly improved during his course of treatment, and by the end showed greater interest in his environment, and at least a flicker of capacity for emotional reaction. With encouragement, he undertook a few limited social activities, and worked in the occupational therapy department. He required supervision and encouragement, but accepted it, and showed some signs of responding. In view of the history, the need for a prolonged period of rehabilitation was anticipated. Unfortunately, the boy's father ordered his discharge on 26.12.48 in spite of remonstrances. He was undoubtedly improved, but a return to his home surroundings at that stage was obviously the worst possible course that could have been taken.

DURATION OF ILLNESS. His improvement following insulin was barely good enough or long enough to constitute a social recovery. His illness was therefore held to have started in November 1946, and to have been in progress for one year and nine months when electro-narcosis was begun.

Category 3. No 15.

CASE 87. Female. Admitted 30/8/48. Age 32.

AETIOLOGY AND PSYCHOPATHOLOGY.

1). Family History. She came of a working class family. Her parents were alive and well, but a maternal aunt suffered from a breakdown at the menopause. The patient was one of twins, and was the brighter and livelier of the two.

2). Early History and Development. She suffered a severe burn on the left arm when 18 months old, and was seriously ill for a time. Otherwise her early life was uneventful. She was above average at school, and then worked as a shop assistant until her marriage. She changed her jobs quite frequently, for the sake of change, but worked well and steadily.

3). Temperament. She was a nervous child, and remained easily frightened and upset as an adult. During the war she was terrified by air raids, and was said to be barely able to control herself. In other respects, however, she was cheerful and good company. She was good tempered and did not take offence easily, and made little complaint when she was ill.

4). Sexual Life. She married in 1941. Her husband was in the Army until 1945, and then resumed his former work as a bus conductor. She had one child, a daughter, early in 1943. Her married life was not very happy from the start, and after her husband came home matters became much worse. He had not written for 6 months before demobilisation and returned without notice. He ill-treated the patient and her child and on occasion

hit them. He kept talking about another woman, and made a habit of going out in the evening without his wife, and without telling her where he went.

5). Summary of Causative Factors. There may have been an element of hereditary predisposition, but it should be recorded that her dissimilar twin had shown no sign of mental disorder at the time the patient broke down. She had shown signs of a hyper-anxious disposition and was clearly not a woman who stood stress well. Her unhappy married life was probably the major contributing factor, but she first showed serious symptoms after seeing her father taken ill with a heart attack.

#### CLINICAL MANIFESTATIONS.

In March 1948 she was very frightened when her father had a heart attack, and when she got back to her own home she fainted. Afterwards, she complained of feeling very weak, and this persisted without any physical basis for it being discoverable. She appeared apathetic and neglected her house, so was referred to the psychiatric department of a London teaching hospital. She was advised to have E.C.T. but refused, so returned home and carried on as best she could. By August it was clear that she was far from normal. She was rambling in speech, and kept getting out of bed during the night, saying she had to go to hospital to be treated for cancer. She complained of hearing voices outside her house, and became quite

incapable of looking after her child. She was admitted to Barming Heath Hospital on 30/8/48.

On examination she was apathetic, withdrawn and indifferent to her environment. She spent much time staring vacantly into space, muttering very quietly to herself. Her speech was incoherent and disconnected and she showed severe flattening of affect. She said that electrical rays were constantly played on her by a man who kept a boot shop on the corner of her home street, as a result of which she had developed cancer and become pregnant. She also said she could constantly hear the voices of a doctor and a nurse discussing her case and suggesting treatment. She showed severe thought blocking, and often her sentences tailed away into silence as she sank into an abstracted state. Often she smiled or grimaced quietly for no apparent reason. She was quite asocial and was incapable of occupation. In the interval before electro-narcosis was administered she was occasionally impulsive, and displayed some resistive and negativistic tendencies.

#### DIAGNOSIS.

Physical and serological investigations revealed nothing significant. There was no sensorial defect to suggest an organic syndrome. Her emotional reaction was never depressive in type, and her conviction that she had cancer was clearly related her ideas of interference. The flattening of affect, mannerisms and thought blocking indicated schizophr  
phrenia



rather than a predominantly paranoid psychosis. She was therefore regarded as a case of paranoid schizophrenia.

#### TREATMENT.

She was given 24 treatments by electro-narcosis, three times weekly, starting on 4/11/48. She received atropin and thiopentone premedication. The electrodes were placed frontally and moved temporally during the course of each treatment. The average coma-dose was 130 mA. No difficulties were encountered.

#### RESULT.

Her mental state improved steadily as the course of electro-narcosis progressed. She became more alert and interested in her environment, made social advances and began to occupy herself. By the end of her course her delusions were no longer in evidence, and she was not hallucinated. She still showed some flattening of affect and her thought processes were slow and laborious. Her manner was odd and stiff, but she co-operated well with measures of rehabilitation. Progress continued after her treatment was over, and she was shaping well for either complete remission or social recovery at the time this survey was completed. As, however, she had not left hospital, she was classified as "Improved".

## DURATION OF ILLNESS.

She had been ill for over 7 months when electro-narcosis was begun.

11. Early History and Development. His infancy was uneventful, he was an average child and left at 17 to enter domestic service. He went to first work in the household of a noble family, and then to a hotel where he was in charge of a room as a very good hotel in London. He was well thought of by his employers, and stayed in that post until the summer of 1914. He refused his employers to get into the army soon quickly. He was taken prisoner in the Western Desert in 1915 and sent to Germany.

12. Characteristics. He was always a quiet and solitary fellow, but good at his job and ambitious in a quiet way.

13. Sexual Life. He never showed any interest in women, and was thought to have regarded marriage as a serious barrier to progress in his chosen career.

14. History of Illness. His illness was presumed to be due to the impact of his experience as a prisoner of war on a man of distinctly cold temperament.

Category 3. No 16.

CASE 91. Male. Admitted 24/8/48. Age 41.

AETIOLOGY AND PSYCHOPATHOLOGY.

1). Family History. His father was still alive, aged 83 and remarkably active. His mother died of cancer during the war. The patient had 2 brothers and 3 sisters, all married and healthy. One brother was in a military mental hospital for four months after being knocked down by a motor van and sustaining a severely fractured skull.

2). Early history and development. His infancy was uneventful. He was an average scholar and left at 14 to enter domestic service. He rose to be first footman in the household of a noble family, and then became hotel valet in charge of a floor at a very good hotel in London. He was well thought of by his superiors, and stayed in that post until the outbreak of war. He reduced his age in order to get into the army more quickly. He was taken prisoner in the Western Desert in 1942 and sent to Germany.

3). Temperament. He was always a quiet and solitary fellow, but good at his job and ambitious in a quiet way.

4). Sexual Life. He never showed any interest in women, and was thought to have regarded marriage as a serious handicap to progress in his chosen career.

5). Summary of Causative Factors. His illness was presumed to be due to the impact of his experience as a prisoner of war on a man of distinctly schizoid tendencies.

## CLINICAL MANIFESTATIONS.

When he returned from Germany he appeared sullen and moody. He seemed unable to pick up the threads of his former life and took little interest in anything. While on prolonged leave he got a job, but was promptly ordered to report to barracks. On the way he cut his throat and was admitted to a military mental hospital, where he remained nearly a year. He seemed little better when he came home, and was only capable of casual work. He was a temporary postman at the Christmas season, and then was employed clearing snow from the roads. Then for a few weeks he did a menial job in a naval canteen. After leaving that he did no work for the 18 months preceding his admission to hospital.

He was awarded a pension for 100% disability. He spent his time lounging about at home, smoking excessively. Any spare money he spent on books which he never read, but filled with meaningless scribbles. He often threatened his sister and his old father. Eventually he was admitted to Barming Heath Hospital as a voluntary patient on 23/6/48, but left 3 weeks later against advice, without having improved at all. He was re-admitted under certificate on 24/8/48.

On examination he was profoundly apathetic and indifferent to his environment. He often chuckled to himself, and used to listen intently to the ward loud speaker when there was no programme in progress. When asked about this he said, "I have brain talk; me and the wireless coming together, making two intelligences". He later complained that he was



being pestered by electrical machines, but his speech was so incoherent and his thought content so vague, that he could not elucidate the matter. He made no social contacts and did no useful work. He made no progress before electro-narcosis was begun.

#### DIAGNOSIS.

Physical and serological investigations revealed nothing abnormal. In spite of the history of a suicidal attempt, he never showed any suggestion of a depressive emotional reaction or mental colouring while in Barming Heath Hospital. When electro-narcosis was used there was no doubt about the diagnosis of schizophrenia. The presence of persecutory delusions, and the absence of characteristics of other sub-types, led to him being classified as a paranoid type.

#### TREATMENT.

He was given 30 treatments by electro-narcosis, 3 times weekly, starting on 8/10/48. He received atropin and thiopentone premedication. He showed considerable sensitivity to thiopentone and care was always necessary in administering it. The electrodes were placed frontally and moved temporarily during the course of each treatment. The average coma-dose was 150 mA. Apart from the sensitivity to thiopentone, no difficulties were encountered.

## RESULT.

When his course of treatment was over he was appreciably more animated and energetic. He performed simple routine jobs in the occupation department and joined in social activities, though without enthusiasm. Profound thinning of affect was still present, and he still expressed vague ideas of being interfered with. He was almost certainly hallucinated, but proof was very difficult to elicit. This slight degree of improvement was still present 6 weeks after his course of electro-narcosis was finished.

## DURATION OF ILLNESS.

Reckoning this from his return to this country, he had been ill for 3 years and 5 months when electro-narcosis was started.

1. Temperament. He was a cheerful, friendly boy,

described as being "steady for anything". He was probably the most sociable member of the family,

and often went to pictures, dances and the theatre.

He was conscientious and persevering over anything he undertook. He got on well with the family and was

affectionate and considerate towards his mother. He

was always ready to do odd jobs about the house,

and probably was given more than his fair share of work in the bakery.

2. Sexual Life. At the time he became ill he was going out with a nice girl. There was no question

CASE 94. Male. Admitted 14/11/48. Age 20.

AETIOLOGY AND PSYCHOPATHOLOGY.

1). Family History. The patient's father was a decent, good-tempered working man, who suffered a head injury in 1943. In 1947, as a sequel, he developed an acute mental illness, and died after three weeks in a mental hospital. The patient's mother was a kindly, affectionate woman. There were 7 children, of whom one died in childhood. All the others, apart from the patient, were healthy and doing well. There was no significant history of mental disorder in the family.

2). Early History and Development. Birth and infancy were normal. He was an average scholar, and after school worked for a time as a grocer's assistant. He then became a baker's roundsman, and only changed his job once, when the round he was working changed hands.

3). Temperament. He was a cheerful, friendly boy, described as being "ready for anything". He was probably the most sociable member of the family, and often went to pictures, dances and the theatre. He was conscientious and persevering over anything he undertook. He got on well with the family and was affectionate and considerate towards his mother. He was always ready to do odd jobs about the house, and probably was given more than his fair share of work in the bakery.

4). Sexual Life. At the time he became ill he was going out with a nice girl. There was no question

of engagement, but equally there was no hint of a quarrel. The girl used to make decorous enquiries for his welfare.

5). Summary of Causative Factors. The causation of his illness was not adequately explained, and was considered to be "endogenous".

#### CLINICAL MANIFESTATIONS.

For about a month prior to admission to hospital he complained of being tired and unable to concentrate. His doctor advised him to stop work but he refused. His employer stepped in, and sent him home. He had a spell of rest, without improvement, and gradually lost his appetite. Then he began to chatter excitedly but quite connectedly to his mother. The night before admission he did not sleep at all. In the morning, his mother brought him a cup of tea. He sat up, stirred it, and suddenly asked what she had put in it. He then sprang out of bed in great excitement, sent the tea flying, tore the bedclothes of the bed and started banging about the house, telling his mother to keep out of the way or he would hit her. He smashed some glass and then rushed out into the street half-naked. He was with difficulty collared by two neighbours, and admitted to Barming Heath Hospital that afternoon.

On admission he was in a state of wild excitement in which he was continuously overactive and impulsive. He was often furiously aggressive, and shouted incoherent nonsense. He was often



obscene and abusive. He required frequent sedation and constant nursing supervision and care. He displayed short periods of stupor, lasting a few hours, in which he lay in strange attitudes and was mute, resistive and intensely negativistic.

After a week he showed no improvement. His overactivity was so intense that active treatment was clearly essential to prevent exhaustion and possibly a fatal issue. The choice lay between E.C.T. in frequent applications, and electro-narcosis. As the diagnosis of katatonic excitement was agreed on, and as such cases had on previous occasions shown a rapid response to electro-narcosis, the latter was chosen. It was felt that this was a proper exception to the general practice of waiting 4 weeks before giving electro-narcosis.

#### DIAGNOSIS.

Physical and serological examinations revealed nothing abnormal. The diagnosis lay between delirium of organic origin, mania, and katatonic excitement. It was impossible to test the sensorium, but he did not show the over-sensitivity to impressions or the embroidering and confabulatory tendencies of an organic delirium. Moreover, there was no clear evidence of visual hallucinations. The elimination of organic delirium on these grounds received confirmation when his acute phase subsided after having electro-narcosis. He then showed amnesia for the acute stage of his illness, but he was correctly

oriented and free from confusion. Even in his most excited phases, the absence of elation and acceleration was noteworthy. He was not distractible and showed no emotional lability. The diagnosis of mania was therefore rejected. The alternation of furious excitement and negativistic stupor was characteristic of katatonic schizophrenia.

#### TREATMENT.

He was given a course of 4 treatments by electro-narcosis between 22/11/48 and 29/11/48. He received atropin and thiopentone premedication. The electrodes were placed frontally and were not moved as he showed frequent extra-systoles during the third and fourth minutes of narcosis. These passed off in the later stages. No other difficulties were encountered. Intravenous injection was a matter of some difficulty on the first occasion.

He was given a second course of 16 treatments, starting on 8/12/48. The technique was the same as in the first course, except that the electrodes were moved temporally during the course of each treatment. The average coma-dose was 125 mA. No difficulties were encountered and extra-systoles did not occur.

#### RESULT.

The improvement during his first course was sudden and dramatic. Within a few days his excitement and overactivity ceased. He became quiet, connected in

speech, and co-operative towards the nursing staff. He was physically in poor shape, but rapidly improved as he took his food well. It obviously cost him an effort to think and he was emotionally unstable, but he was once more in touch with his environment.

On 7/12/48 he suddenly relapsed into his former state of wild excitement, so electro-narcosis was resumed on the following day. The improvement during his second course was slower, but more profound. By the end he was sociable, usefully occupied, and free from signs of excitement. He continued to do well until a fortnight after electro-narcosis was finished, when he developed acute appendicitis and was operated on. In the post-operative period his demeanour was normal, and when this survey was completed, he appeared to be well on the way to complete remission. In view of his surgical condition and the former sudden relapse, a prolonged period of stabilisation was felt to be essential. As he had not left hospital, he was classified as "Improved".

#### DURATION OF ILLNESS.

He had been ill for about a month when electro-narcosis was begun.

CASE 96. Male. Admitted 1/3/47. Age 24.

AETIOLOGY AND PSYCHOPATHOLOGY.

1). Family History. The father was a normal, reliable artisan. The mother was a large, overpowering woman, who lavished all her affection and protectiveness on the patient, who was an only child. There was no family history of mental disorder.

2). Early History and Development. His infancy was uneventful, but he never got on well at school. He was backward at work, but the possibility of mental deficiency was not considered at that time. He disliked school and could not stand up for himself against other boys. He took no interest in sport and was generally regarded as "soft". After school he was apprenticed to an upholsterer for 18 months, when the firm closed down shortly after war broke out. He was then an errand boy for a short time before getting a job on the railway as an assistant brakesman. This was a reserved occupation, and he kept his place until the summer of 1944. After that he made no further effort to work.

3). Temperament. He was very quiet and a poor mixer. In company he was so shy and embarrassed that he appeared rude and abrupt. He was very faddy with his food and dependent on his mother. While on the railway he used to bicycle with another boy, but when the latter got a girl friend the patient did not make any more friends.

4). Sexual Life. He never had a girl friend, but was



more shy with girls than anyone else.

5). Summary of Causative Factors. He was sufficiently backward to be on the verge of feeble-mindedness. He apparently found the strain of trying to keep up with his better endowed contemporaries, too much for him. His mother's influence was an adverse factor, as she ignored expert advice on how to handle him, and accentuated his schizoid traits.

#### CLINICAL MANIFESTATIONS.

He was a problem even in his schooldays. At the age of 15 he was taken to a well known London clinic, where his mental age was estimated at 10. His parents were advised to let him have a year away from home before starting work, but his mother was deeply affronted and became more protective than ever. In June 1944 he became convinced that his foreman was against him, threatened him with violence and lost his job. After that he made no effort to get another post and changed in his attitude at home. He lounged in a chair all day, was surly and bad-tempered, and often swore at his parents. In March 1945, he said one day that the cabbage for dinner was grass, and cursed his mother. His father reprimanded him, so he attacked his father, and it was all his parents could do to control him. He was, accordingly, admitted to Barming Heath Hospital on 16/3/45.

On examination he was restless and excitable. He was withdrawn from contact with his environment and incapable of looking after his ordinary needs.

While he was excited he was noisy but quite incoherent, and appeared to be hallucinated. Soon he passed into a phase of stupor, in which he was mute, resistive and negativistic. This alternation continued for months, although there was a general trend towards improvement. He became a useful farm-worker, and slowly became more amiable and co-operative. It was very noticeable that he became excitable and impulsive after being visited by his mother. She proved very difficult to deal with, saying that her boy was "Crying his heart out" in hospital, and blaming the staff for making him ill. During 1946, she and her husband began pressing for his discharge. As he had made some progress, and was no longer impulsive, he went to their care on 5/12/46.

On 1/3/47 he was readmitted, having been suspicious, resistive, abusive and often violent in the interval. His phasic alternation was again pronounced, and he freely admitted hearing voices "Talking plenty of rubbish". His condition slowly deteriorated as the months passed. He became more withdrawn from his environment and was incapable of occupation.

#### DIAGNOSIS.

Physical and serological investigations revealed nothing significant. At no time did he show any characteristics of an affective psychosis, and the diagnosis was not in doubt when electro-narcosis was begun. The alternation between impulsive

excitement and resistive stupor was typical of katatonic schizophrenia.

#### TREATMENT.

He received 20 treatments by electro-narcosis, three times weekly, starting on 29/11/48. He received atropin and thiopentone premedication. The electrodes were placed frontally and moved temporally during the course of each treatment. The average coma-dose was 130 mA. No difficulties were encountered.

#### RESULT.

Electro-narcosis was undertaken partly owing to repeated impassioned pleas by the mother for something to be done. She had heard of leucotomy and entertained extravagant hopes, if only the operation could be done. This was firmly resisted, and electro-narcosis instituted in the belief that it could do no harm. To everyone's surprise he showed some response. His alternation of phase disappeared and he began to occupy himself and take some interest in his appearance. Evidence of hallucinations could no longer be elicited. In particular, he was much more co-operative and pleasant in manner, and was not rude to his parents. His mother was rapturous, and was considering having him home again at the time this thesis was submitted.

#### DURATION OF ILLNESS.

He had been ill for 4 years and 5 months when electro-narcosis was begun.

Category 3. No 19.

CASE 99. Female. Admitted 16/10/48. Age 33.

AETIOLOGY AND PSYCHOPATHOLOGY.

1). Family History. The patient's mother was a school-mistress. She was the eldest child in her family, and the only girl among many boys. She was described as an able, spoiled and self-willed woman. After parting from her husband she had two illegitimate children, of whom the patient was the elder. She then married again. She always disliked the patient and avoided taking any responsibility for her. A maternal grand-aunt was for many years in a mental hospital, and a maternal uncle suffered from "shell-shock" in the first world war, and was neurotic for many years afterwards. The patient's sister, or half-sister, was a difficult girl, who had recently got married for the second time. No information about the father was available.

2). Early History and Development. She was an unwanted illegitimate child, fostered until the age of 9 by strangers. After that she lived with her maternal grand-parents, who spoiled her, but found her difficult and often beyond their control. She was intelligent at school but always in trouble, and on one occasion was nearly expelled. She left school when 15. As her grandfather's business was not very prosperous at the time, representations were made to the mother that she should make arrangements for further care and education. She replied by placing the girl in domestic service, a job well below the social status



of the family. She soon ran away from this post and went back to her grandmother. She was old and in poor circumstances, so the patient had to go to an institution. Thenceforward she was moved from one institution to another until she became mentally ill. She was a voluntary patient in a mental hospital for 3 months in 1945, but did well and resumed institution life, until her second breakdown.

3). Temperament. She grew up emotionally immature and simple in her ways, although her school record indicated an adequate intellectual endowment. From an early age she was subject to temper tantrums, and later was undisciplined and jealous. She made few friends and was notably egocentric. She had a strong sense of being unwanted, and easily became "persecuted". She showed little power of persistence in effort and was much given to day-dreaming.

4). Sexual Life. Soon after the patient left her first job, her grandmother discovered a number of letters of a rather intimate and passionate nature from the neurotic maternal uncle. He denied impropriety and there was no evidence of misconduct. The affair soon petered out. Some years later the patient announced that she was going to get married. Her relatives started enquiries and found that the man was already married. The patient accepted the position as best she could. Again there was no evidence of misbehaviour on her part.

5). Summary of Causative Factors. There may well have been a hereditary constitutional element,

but the conditions of her early life and upbringing were probably much more important. Her personality was somewhat schizoid, but this trend was overshadowed by characteristic features of psychopathy of the predominantly passive-inadequate type. There was no obvious precipitating factor apart from those mentioned.

#### CLINICAL MANIFESTATIONS.

In June 1945 she entered a mental hospital as a voluntary patient, complaining of depression. Apart from the inadequacy of her personality, little was found to be seriously amiss. She was mildly depressed and complained bitterly about being unwanted, but rapidly improved and took her departure in September in a bright and cheerful frame of mind.

In October 1948, while in an institution, she became suddenly excitable and restless. After 4 days of intermittent struggle, she proved impossible to manage, and was admitted to Barming Heath Hospital on 16/10/48. Under observation she alternated between phases of excitement and resistive stupor. In the former she was overactive and aimlessly impulsive. She shouted or screamed incoherently and was aggressive in a feeble way. In the latter she was mute, resistive and negativistic. At all times she was indifferent to her environment and incapable of looking after her ordinary needs. When she settled down somewhat she complained of hearing voices, whose burden was that she was not wanted. She also said that she received commands from them, and felt that

Her mind was being influenced by other people in ways she did not want. She made no attempt to mix socially and was incapable of useful occupation. She showed no improvement before electro-narcosis was used.

#### DIAGNOSIS.

Physical and serological examinations revealed nothing significant. In her accessible periods she was correctly oriented and showed no serious defect of memory, so an organic syndrome was excluded. For a time, the possibility of an affective psychosis was seriously considered, but she showed no elation or acceleration in her overactive phases. Her affect also was thin and quite lacking in contagion. The voices telling her she was unwanted were accompanied by an emotional tone of resentment, not depression, and she never expressed any ideas of unworthiness or inadequacy. The phasic alternation in her condition was typical of schizophrenia of the katatonic type.

#### TREATMENT.

She was given 16 treatments by electro-narcosis, starting on 30/11/48. She received atropin and thiopentone premedication. The electrodes were placed frontally and moved temporally during the course of each treatment. The average coma-dose was 120 mA. No difficulties were encountered.

## RESULT.

After four treatments improvement became apparent, and by the end of her course she had made considerable progress. Her alternation between excitement and resistive stupor no longer occurred, and she was brisker, more alert and interested in her environment. She made social contacts and was usefully occupied. Her hallucinations and ideas of passivity had cleared up, but her affect was still thin, and her behaviour somewhat uncertain. Ten days after electro-narcosis was finished, she had a short period of excitement in which she was confused and noisy, but this subsided in four days and she resumed her occupation. In view of the social background there seemed little prospect of her leaving hospital, so efforts were being made to fit her into a niche in hospital activities when this survey was completed. She was regarded as improved, following electro-narcosis.

## DURATION OF ILLNESS.

She had been ill for approximately six weeks when electro-narcosis was begun.



Category 3. No 20.

CASE 103. Male. Admitted 9/11/48. Age 24.

AETIOLOGY AND PSYCHOPATHOLOGY.

- 1). Family History. His father was a kindly, rather soft-hearted publican, and his mother a well-meaning but rather foolish woman. The patient was the eldest of three boys; the next one was in the R.A.F. abroad, and was normal and doing well. The youngest, aged 13, was very fat and appeared to have some endocrine disorder. Otherwise there was no family history of disorder of a relevant kind.
- 2). Early History and Development. Birth and infancy were normal and he was an average scholar. After school he worked for a time in a paper-mill, and then in an engineering works. Early in the war he volunteered for the Navy and was accepted as a petty officer artificer. He was stationed at Chatham during the Battle of Britain and the blitz, and later went out to Malta in one of the historic convoys. He came in for the later stages of the attack on Malta and remained there until the end of the war.
- 3). Temperament. As a youngster he was on the quiet and reserved side, but not to an abnormal degree. He had friends and indulged in usual boyish activities.
- 4). Sexual Life. He was inclined to be shy with girls and never had a girl friend. He preferred the company of lads of his own age.
- 5). Summary of Causative Factors. His previous personality was perhaps not a very strong one, but no constitutional or developmental factors could be

discovered. The main blame for his breakdown must therefore be attributed to his experiences during the war.

#### CLINICAL MANIFESTATIONS.

When in Malta he wrote home very little, even after easy communications had been established. When he was demobilised, instead of going home, he went to his grandmother, who wept at his changed appearance and manner. At first he was thought to be physically ill, but it soon became apparent that he had no interest in anything.

He came home at the beginning of December 1946, but never settled to work. He started to help his father once or twice, but soon gave up, saying he felt tired. He started work once or twice, but gave up after a few days. He spent his time sitting about the house, with a vacant expression on his face. Occasionally he had attacks of breathlessness, in which he used to pull off his collar and tie, open all the windows in the house, and sweat profusely. As time passed, he would not answer when spoken to, and became disjointed and incoherent in speech. Finally he began to complain that the bread was poisoned, and insisted on spraying the kitchen with disinfectant. He went to Barming Heath Hospital as a voluntary patient on 31/8/48, but left 4 days later, before his case could be properly investigated. He was persuaded to return on 9/11/48

On examination he was morbidly preoccupied, indifferent to his environment, and somewhat manneristic. He showed severe thinning of affect, with some residual resentment and suspicion. He said that poisoned dust was being put in his food by gypsies, and complained of hearing a man's voice which went on and on till it "got on his nerves" and made him feel that he could not fight against it. He described many strange physical sensations, some of which he attributed to the poison, but some of which were due, he said, to interference with his mind by people who bore him ill will. He made no social contacts at all, and would not employ himself. He showed no spontaneous improvement before being given electro-narcosis.

#### DIAGNOSIS.

Physical and serological examinations revealed nothing abnormal. His emotional reaction and mental content were not depressive in character at any time while he was under observation. The flattening of affect, mannerisms and ideas of passivity were characteristic of paranoid schizophrenia, rather than of a predominantly paranoid psychosis.

#### TREATMENT.

He was given 19 treatments by electro-narcosis, three times weekly, starting on 13/12/48. He received atropin and thiopentone premedication. The electrodes were placed frontally and moved temporally during

the course of each treatment. Throughout his course he regularly had a major convulsion at the end of the first stage, without ill effect. No adjustment of the dosages of thiopentone or electricity altered this phenomenon. No difficulties were encountered.

#### RESULT.

Slow improvement occurred throughout his course. After 3 weeks, however, he had a short period of excitement, in which he impulsively attacked another patient, though in a rather half-hearted way. No repetition of this behaviour occurred.

At the end of the course he was considerably brisker and more alert. He took more interest in his environment, and was beginning to make social contacts. He was occupied, and improving in concentration and persistence. He no longer expressed his former delusions, and there was no definite evidence of hallucinations. He was, however, distinctly odd in manner, and still showed serious thinning of affect. He was inclined to be suspicious and evasive. Even though he did not openly express ideas of passivity, he still complained occasionally of aches and pains for which no organic basis could be found. It was clear that, although he showed increased initiative, he was dependent on urging and supervision to enable him to maintain his hold on reality, and continue with activities likely to lead to rehabilitation. He was therefore regarded as improved, as he had not achieved the standard of social recovery.



## DURATION OF ILLNESS.

He had certainly been ill for two years when electro-narcosis was started, and had probably been ill longer although definite evidence was not available.

CASE 1. Female. Admitted 21/8/45. Age 18.

AETIOLOGY AND PSYCHOPATHOLOGY.

1). Family History. There was no definite history of mental or nervous disorder. The patient's father kept a fancy shop with a post office attached, and was in poor health. The mother was a nervous, fidgetty woman who said she herself was very shy when young. The patient was the only child living; a boy was still-born when she was 8. This event upset her greatly.

2). Early History and Development. Her infancy was uneventful. She was an average scholar at her elementary school. When she left she went to a commercial college, and only obtained a very lukewarm testimonial. Her first clerical job only lasted a few months, and her second one a few days. After that she worked at home and in the shop without enthusiasm, up to the time of her admission to hospital. She disliked the work and required a lot of driving. This led to a lot of friction between the patient and her father, which the mother constantly tried to smooth down, with indifferent success.

3). Temperament. From an early age she was quiet and shy. She never mixed with others, and seldom went out. Her main relaxation consisted in reading magazines and very light literature.

4). Sexual Life. She was quite friendly towards boys who came into the shop, and was not unduly shy or awkward. She never had any special boy-friends, however, and never went to dances.

5). Summary of Causative Factors. Although no hereditary element could be demonstrated, she presumably was constitutionally predisposed to mental illness. She was certainly of poor physique. She showed schizoid traits from an early age and her drab life in an atmosphere of contention did nothing to help her to overcome them.

#### CLINICAL MANIFESTATIONS.

The onset of her illness was very gradual. She showed a gradual intensification of her schizoid traits, and was not recognised as being mentally ill until very shortly before her admission to hospital. On probing the matter, however, her parents revealed that in 1943 they found a piece of paper on which she had written down what she should do. On this she said :- "1. Run away. 2. Commit suicide. 3. Stay put." Opposite the second course she had scribbled "Too drastic", and at the bottom had added "Better stay put". From about that time onwards she became progressively more listless; she lost interest in her work and increasingly neglected her personal appearance. Finally it became difficult to get her to wash and keep herself tidy.

For a few weeks before admission to hospital she could not concentrate on books, but sat about doing nothing. She was noticed to smile and giggle to herself a lot. On the morning of her admission to hospital she got up early and went downstairs with her eider-down wrapped round her. She had been accustomed to doing this during the raids, but on this occasion she

went out into the street and proceeded to the cottage of an acquaintance. She refused to go home with her parents, so the doctor was summoned and admission to hospital arranged.

In hospital she showed profound apathy and indifference to her environment. She required prompting to take her food and attend to her toilet. Her power of affective response was minimal and she spent her time gazing vacantly into space. She made no effort to make social contacts and was incapable of useful occupation. She frequently grinned and grimaced to herself for no apparent reason, and adopted strange poses which she maintained for considerable periods. She rarely spoke, but was not noticeably resistive or negativistic.

She showed little change for five months, but then became considerably more manneristic and erratic in conduct. This trend developed and three months later she was definitely impulsive during spells of excitement. As time passed, the picture of alternation between phases of wild excitement and resistive stupor became clear. In the former she was aggressive and destructive, with a strong taste for smashing windows. In the latter she became increasingly negativistic. This cycle of events continued until electro-narcosis was begun.

#### DIAGNOSIS.

Physical and serological examination revealed nothing significant. The diagnosis was not in doubt when electro-narcosis was used. At an earlier stage, the



contemplation of suicide in circumstances of obvious unhappiness might have raised the possibility of the depressive aspect of an affective psychosis. This, however, was ruled out by later developments, which were typical of the katatonia variety of schizophrenia.

TREATMENT. She was given 12 treatments by electro-narcosis, three times weekly, starting on 29/1/48. She received pre-medication by atropin only. The electrodes were placed temporally and the average coma-dose was 125 mA. Four of her narcoses were rather restless, but no memory of the treatment was retained. No other difficulties were encountered.

RESULT. After each treatment she had a period of extreme restlessness, lasting about one hour, but while she was undergoing her course, the general trend was towards a lessening of overactivity. When treatment was finished she was appreciably less restless and destructive. She was not negativistic, and was able to sleep without nocturnal sedation. She made no social effort, but was no longer rude, and did not repel advances made by others. She undertook a little knitting, her first occupation for many months. This degree of improvement lasted for approximately 5 months; she then relapsed to the condition she was in before having electro-narcosis.

DURATION OF ILLNESS. Dating her illness from the episode of the piece of paper and noteworthy deterioration, she had been ill for about 4 years and 6 months when electro-narcosis was started

CASE 2. Female. Admitted 4/12/46. Age 31.

AETIOLOGY AND PSYCHOPATHOLOGY.

1). Family History. Her father and mother were in service as a married couple. The father was in a mental hospital for 9 months in 1934. The mother complained of her nerves, and had a breakdown in 1943 whose main symptom was loss of energy. She did not require admission to hospital. There were 4 other children in the family, all normal.

2). Early History and Development. Birth and early infancy were normal. She was quite bright at school, after which she went into resident domestic service. She satisfied her various employers and only left her work to get married.

3). Temperament. She was described as pleasant to get on with, but moody and unduly sensitive to criticism. She did not make friends easily, but this was partly due to lack of opportunity, as much of her life was spent in isolated villages. She was inclined to worry about trifles and easily got flustered.

4). Sexual Life. She married in 1939 at the age of 24. Her husband was a tree feller. He did not drink or smoke, and was said to be a steady chap, and a good husband. She had two children born in 1940 and 1942, and was from the first over-anxious about them.

5). Summary of Causative Factors. There was presumably a hereditary constitutional element. She certainly showed schizoid traits from an early age. Resident domestic work and life in remote villages were not favourable to a person of her temperament. Her

illnesses occurred without any obvious precipitating factors.

#### CLINICAL MANIFESTATIONS.

In December 1943 she complained of feeling tired and of being unable to sleep. She found the work of looking after her children was too much for her and her talk became rambling. She gradually lapsed into a state of stupor, and was admitted to Barming Heath Hospital as a temporary patient on 29/12/43.

On examination she was completely stuporose. She showed no response to her environment, and was mute. She did nothing for herself and required to be hand fed. She required every nursing care and supervision. Although she was somewhat resistive, she was not negativistic. After a few days, she began to show a little puzzled interest in things around her, and made efforts to answer questions. She then suddenly became wildly excited and rushed about impulsively, shouting and screaming incoherent nonsense. She had hallucinations of threatening and unpleasant voices, from which she was apparently trying to escape. A cycle of alternation between excitement and resistive stupor then began and persisted with diminishing intensity for several months. She then became amenable to rehabilitation measures, after which she made steady progress, and was able to leave hospital in June 1944.

She remained well until June 1946, by which time her husband was out of the Army. She became increasingly

apathetic. She did not look after the children properly, and could only be got out of bed in the morning after a struggle. She then said that everyone was staring at her and that there was a plot to get her out of her house. She gradually passed into a state of stupor, and was admitted once more to Barming Heath Hospital.

After admission she was stuporose, mute, faulty in habits and totally dependent on nursing care. She was mildly resistive at times, but not seriously negativistic. She remained in this state for three months, when she once more became excited, impulsive, noisy and hallucinated. This phase lasted about a month after which she improved slightly. She remained facile, inconsequent in speech and erratic in conduct, with a tendency to excited outbursts or short periods of stupor from time to time. In 1947 she had a course of 9 E.C.T. treatments without benefit. Her illness pursued its rather variable course without any general trend toward improvement until electro-narcosis was used.

#### DIAGNOSIS.

By the time electro-narcosis was considered there was no doubt about the diagnosis. Physical and serological examination revealed nothing significant. At an earlier stage depression and organic delirium were alternatives requiring consideration. She never showed a depressive emotional reaction, nor, while accessible to testing, did she show any clouding of consciousness. The alternation between phases of wild excitement and stupor with



resistiveness was characteristic of schizophrenia of the katatonic type.

#### TREATMENT.

She was given 12 treatments by electro-narcosis, 3 times a week, starting on 29/1/48. She received pre-medication by atropin only. The electrodes were placed temporally and the average coma-dose was 120 mA. She had bad teeth and difficulty was experienced due to bleeding gums. Unless her mouth was frequently cleansed, a mixture of blood and saliva tended to obstruct respiration. The trouble experienced with her led to the institution of preliminary dental treatment as a routine measure in all subsequent patients. No other difficulty was experienced with her.

#### RESULT.

She brightened up during her course of treatment until nearly the end, when she had a phase of confusion, followed by a period of wild excitement, in which her habits were dirty and extremely degraded. This was severe for three days, after which a gradual improvement set in. Three weeks later she was interested in her surroundings and appearance. She discussed the possibility of getting a "new look" outfit. She began to take an interest in social activities, and worked usefully in the occupation department. This considerable improvement was noticeable for about six months, after which she slowly retrogressed. Although she did not quite return to the state she was in before treatment, the amount of improvement was too slight

to base any claim on.

DURATION OF ILLNESS. Sh

She had been ill for 1 year and 7 months when electro-narcosis was begun.

2) History of the illness. She was a young child who passed all the milestones of infancy at the right time. She was quite intelligent, and just missing a bond to go to school. She had been well into school for three years. In 1934 she was admitted to hospital work. She was well in school, and lived in a home. She was well in school and in her four years she did good work, and then was sent to the day shift before returning home at the end of the war.

3) Interests. She was quiet, reserved and shy. She made few friends and spent her evenings reading and sewing. She seldom went out, and was never married. Her only interest was in her younger sister.

4) Sexual life. She never showed any interest in sex. No significant information was obtained.

5) Summary of psychiatric history. The absence of any clear pattern in the history of her symptoms and in her family history is noted. She was well in school and in her four years she did good work. She was well in school and in her four years she did good work. She was well in school and in her four years she did good work.

Category 4. No 3.

CASE 3      female.      Admitted 17.12.46. Age 23.

AETIOLOGY AND PSYCHOPATHOLOGY.

1) Family History.      Her father worked in a paper-mill. He and his wife were a quiet working class couple. Their eldest boy was killed in 1932 in a bicycle accident just after leaving school. The patient was the next child and there was one sister six years younger. There was no history of mental disorder.

2) Early History and Development.      She was a placid child who passed all the milestones of infancy at the right time. She was quite good at school, only just missing a scholarship to secondary school. She then went into service in the house of a local magnate and did well for three years. In 1940 she volunteered for munition work. She was sent to Acton, where she lived in a hostel quite happily and did well at her job. For four years she did night work, and then had one year on the day shift before returning home at the end of the war.

3) Temperament.      She was quiet, reserved and unsociable. She made few friends and spent her evenings knitting or sewing. She seldom went out, and when at home showed a tendency to cling to her younger sister.

4) Sexual Life.      She never showed any interest in boys. No significant information was obtained.

5) Summary of Causative Factors.      The absence of any clearcut pattern in the genesis of her psychosis must be admitted. The effect of four years continual night work in the London area during the war must, however, have been

serious. It is clear that the first signs of illness appeared while she was working in the munition factory.

CLINICAL MANIFESTATIONS. She complained of people talking about her at work when she was at Acton. No definite date can be given as to when this started, but it was probably early in 1945. She was unsettled when she came home. She was moody and unusually silent. Although she went to work in the same mill as her father, she disliked her job, even though the work was much lighter than during the war. At the end of a year she left, then tried one or two other jobs, from one of which she was brought home weeping and behaving strangely.

She refused to talk or say if anything had upset her. She kept packing her case and muttering that she must go and get a job, then unpacking and weeping. Finally she tried to jump out of a first floor window and fought her family when they restrained her.

When admitted to Barming Heath Hospital, she was at first restless, resistive and negativistic, but soon became quiet and amenable. She maintained a strange attitude with her head bowed and twisted to one side. With one hand she kept part of her face covered. She showed considerable thinning of affect and answered questions shortly and often irrelevantly in a dreamy, "far-away" voice. Her thought content was vague in the extreme, and blocking was frequent and severe. She said other people were talking about



her in an unpleasant way, but gave no other evidence of delusions or hallucinations.

As time passed it became clear that the outstanding feature of her case was a liability to phases of intense excitement with impulsiveness. On one occasion she successfully escaped, and on many others she made serious attempts. She smashed windows and crockery on numerous occasions, and often rushed wildly and aimlessly around the ward or garden. She also had phases of resistive stupor with negativism, during which feeding was a problem. She had a course of 10 E.C.T. convulsions during January 1947 without benefit; the pattern of her behaviour continued to repeat itself until she was given electro-narcosis.

DIAGNOSIS. Important physical factors were excluded by clinical and serological investigations. When she was admitted, the possibility of a confusional state due to toxæmia or exhaustion was seriously considered. Apart from the absence of any history of such factors she showed no clouding of consciousness, hallucinations or increased responsiveness and suggestibility. When excitement began to dominate the picture, mania was excluded by the absence of elation or acceleration. She showed neither flight of ideas nor distractibility. The phasic alterations in her state left no doubt that she was a schizophrenic of katatonic sub-type.

TREATMENT. She was given a first course of twelve treatments by electro-narcosis, three times a week, starting on 29.1.48. She had atropin premedication only. The electrodes were placed temporally and the average coma-dose was 100 mA. There was considerable difficulty in getting breathing established at the end of the second stage and she showed a tendency to develop laryngeal spasm at successively lower dosage levels as her course progressed.

On 1.6.48. she was given a second course of eighteen treatments thrice weekly. On the first occasion, with frontally placed electrodes and a coma-dose of 125 mA, the narcosis was light and restless, although she had received atropin and sodium amytal premedication. She was therefore given thiopentone on all subsequent occasions. The electrodes were placed frontally and the average coma-dose was 130 mA. She showed no tendency to laryngeal spasm.

RESULT. Four days after her first course she had a confusional flurry lasting about a fortnight. When that passed off she showed increased interest in her surroundings and appearance. She was less manneristic and made an effort to occupy herself, as well as taking some interest in social activities. This improvement was held for about two months, during which time the phasic alternation seen earlier was in abeyance. As she then relapsed, she was given her second course of treatment with less obvious benefit

Category 4. No 4.  
Case 4. Female. Admitted 11.4.46. Age 29.  
than from the first. She did, however, seem to have been made once more amenable to re-education. This degree of improvement also lasted for about two months. When the katatonic alternation became re-established, and was still running its course six months after treatment was finished.

DURATION OF ILLNESS. There seems no doubt that symptoms first appeared early in 1945, after which time she was never really normal. As, however, she was able to live at home and carry on at work until the end of November 1946, the duration of her illness was reckoned from then, as one year and 2 months at the time electro-narcosis was started.

Since her illness, her love of him has remained unaltered ever afterwards. This very young the patient barely died from eating lavender seeds. Her mother was in a panic, and subsequently indulged her daughter's every whim. The patient grew into a solitary child, unwilling to grow up and quite ready to 'sit all day in a tree'. She did fairly well at school and remained till she was sixteen, but never subsequently gained for anything. She had various jobs as a children's nurse, but was dismissed for irresponsibility. She liked a job and when obtained at a telephone exchange, but lost it for disobedience to the supervisor. During the war she did factory work until 1943, after which she did nothing at all.

37. Temperament. From an early age she was solitary and

CASE 4. Female. Admitted 21.4.47. Age 29.

AETIOLOGY AND PSYCHOPATHOLOGY.

- 1). Family History. The patient's father was a grocer, rather a weak little man, completely under his wife's thumb. She was rather a domineering "committee-woman" type, with few domestic gifts. The family consisted of three girls of whom the patient was the youngest; the other two were married and had families of their own. A maternal uncle died of epilepsy when twenty-one, and a maternal great-grandfather was an alcoholic.
- 2). Early History and Development. She was an unwanted child born while her father was abroad during the first World War. He returned when she was two and a half. She was furiously jealous of him and remained antagonistic ever afterwards. While very young the patient nearly died from eating laburnum seeds. Her mother was in a panic, and subsequently indulged her daughter's every whim. The patient grew into a solitary child, unwilling to grow up and quite ready to "sit all day in a tree". She did fairly well at school and remained till she was sixteen, but never subsequently trained for anything. She had various posts as a children's nurse, but was dismissed for irresponsibility. She liked a job she then obtained at a telephone exchange, but lost it for rudeness to the supervisor. During the war she did factory work until 1943, after which she did nothing at all.
- 3). Temperament. From an early age she was solitary and



precipitating factors in her breakdown.

CLINICAL MANIFESTATIONS. In July 1937 she was a voluntary patient in Barming Heath for three days, after one of her earlier phases of "bad-temper". The start of her final illness was in 1943 when she gave up her factory work. She became increasingly moody and self-absorbed. Although nominally helping her mother in the house she became very lazy, and gradually neglected her appearance until she would not even keep clean. When she became pregnant in 1946 the progress of her illness was accelerated, but her mother opposed all suggestions to obtain psychiatric advice. Finally, however, the patient threatened to poison her eldest sister's children, so action was taken and she was admitted to Barming Heath under certificate.

She was then indifferent to her environment and almost mute. On the rare occasions when she replied to questions she only did so after a long pause, and was laconic and irrelevant. She grinned and giggled to herself constantly, and showed serious thinning of affect. She made no social efforts and was incapable of useful work. She used to whisper to herself when she thought she was not observed, and agreed, on one occasion, that she heard voices. Apart from occasional attacks of bad temper and mild impulsiveness she showed no change before electro-narcosis was started.

DIAGNOSIS. Physical and serological examinations failed to reveal anything significant. The diagnosis

was hardly in doubt once the history was known and she had come under expert supervision. As a matter of form, depression **was** excluded as she had no characteristic emotional reaction or mental content. The inertia, hallucinations, mannerisms and mild impulsiveness indicated schizophrenia of the hebephrenic type. The background of psychopathy was not ignored.

TREATMENT. She was given a course of nine E.C.T. treatments in May 1947, as a result of which she was rather brighter for a few weeks, but then relapsed.

She was given twelve treatments by electro-narcosis, starting on 29.1.48. She received atropin pre-medication only. The electrodes were placed temporally and the average coma-dose was 110 mA. No difficulties were encountered.

RESULT. She was rather brighter and more interested in her environment for a few weeks. It was possible to coax her to do a little simple work. She gradually slipped back, however, into the state she was in before electro-narcosis. On 25.8.48 her father, acting at the behest of her mother, ordered her discharge against medical advice. No improvement as a result of treatment was claimed.

DURATION OF ILLNESS. She had been ill for approximately four years and seven months when electro-narcosis was administered.

Category 4. No 5.

CASE 8. Male. Admitted 9/11/46. Age 27.

AETIOLOGY AND PSYCHOPATHOLOGY.

1). Family History. The patient's mother had been mentally abnormal for many years when he himself became ill. Although she was never admitted to hospital, she would not go out, as she said everyone was against her and spreading scandal about her. She grew bitterly resentful towards her husband, and showed him no affection, but nursed him most conscientiously during his last illness. This lasted several months, as he died in January 1946, some time after a stroke. The patient had two elder sisters, one younger brother and a younger sister, all normal. The maternal grandmother, who lived with the family for many years, was an exceptionally domineering woman. The family doctor considered that she was in large part responsible for her daughter's state of mind. She certainly availed herself of the opportunity presented by it to dominate all the other members of the family.

Early History and Development. His early infancy was normal. He was bright at school, and refused to make use of a scholarship, as he felt that it would have placed too heavy a financial burden on the family. He worked for a local farmer and did well. He was entrusted with responsible jobs in the market and stayed with the same employer for 6 years until he was called up into the militia in 1939. After school he attended night classes for several years, and hoped eventually to get into the police.

He was in one of the first age groups to

which he actually found. He was very distressed by the lack of equipment and what he felt to be the bad leadership during the early Libyan fighting. When he joined the partisans in Italy, he felt that they were fighting mainly for the love of it, so made his way to Switzerland in a very cynical condition. At home he grew more and more "Browned off", and became much worse when refused a compassionate posting to be near his father after the latter had had a stroke. When his father died, the patient went to pieces rapidly, and in May 1946 tried to cut his throat. He was admitted to a military mental hospital and eventually discharged from the Army . He was then transferred to Barming Heath Hospital under certificate.

A report was forwarded by the military authorities saying that while under their care he was dull, anergic and hallucinated. The diagnosis of schizophrenia of the paranoid type was made. The report also stated that he had always been solitary and shy. If true, this would have thrown light on his case. His sisters however, denied it, and the source of the information was unfortunately not given.

On admission to Barming Heath Hospital the clinical picture was very suggestive of depression. He was slow in speech, and said he had been guilty of the sin of greed, so that he had no real right to eat the food. As it was put in front of him, however, he felt that he ought to take it rather than refuse. He accused himself of having committed numerous war crimes against humanity, and admitted having formerly had



hallucinations of hearing. There was, however, no real force in his emotional reactions, which were thin, and at times inappropriate. He showed blocking of thought, rather than retardation, with an accompanying puzzled frown.

As time passed, he became increasingly detached, indifferent to his environment, and seldom spoke, even in answer to questions. Periods of mild excitement with impulsiveness began to appear, and came to a head several months after admission, when he had a phase of wild excitement, with continuous impulsive overactivity. In none of these phases was there any genuine elation or acceleration.

He had two courses of E.C.T. in March and May 1947, of 9 treatments each. On each occasion he temporarily brightened up a lot, but relapsed into his former state about 10 days after the treatment was over. By the time he was given electro-narcosis, he often grinned to himself for no apparent reason. He discussed his supposed war crimes in a detached impersonal way, as though they related to someone else. He showed a shallow, facile affect with no genuine depression, and once more admitted being hallucinated.

#### DIAGNOSIS.

The relation of his case history perforce raised the main points in regard to diagnosis. The grounds on which a diagnosis of paranoid schizophrenia was made in the military hospital were unfortunately not stated. The elimination of depression was largely the result of

prolonged observation. It would have been rash to make a dogmatic statement at the time of his admission, though pointers to the possibility of schizophrenia were present even then. The absence of manic features in his excited periods was confirmatory evidence of the schizophrenic nature of his illness, and his failure to respond well to E.C.T. was regarded as significant. Physical and serological investigation revealed nothing significant.

TREATMENT. He was given 12 treatments by electro-narcosis, three times weekly, starting on 30/1/48. He received atropin premedication only. The electrodes were placed temporally and the average coma-dose was 135 mA. No difficulties were encountered.

#### RESULT.

At the end of his course of treatment he was a little brighter, but 10 days later he had relapsed into the state he had shown before electro-narcosis. There was no subsequent improvement.

#### DURATION OF ILLNESS.

He had been ill for just over 2 years when electro-narcosis was started, calculating from the death of his father.

CASE 13. Female. Admitted 24/12/45. Age 22.

AETIOLOGY AND PSYCHOPATHOLOGY.

1). Family History. The paternal Grandfather died in a mental hospital after a long illness. A paternal aunt was in a mental hospital at the time the patient became ill. The maternal Grandmother died in a mental hospital after a depressive illness lasting three years. The patient's father suffered from "shell-shock" during the first World War. He had frequent bouts of nervousness and irritability until the time of his death in 1934. There were four children in the family altogether. The eldest, a boy, was normal; the next, a girl, was in poor health, having had tuberculosis of the bowels as a child, and rheumatic fever later in life. The third child was the patient, and the fourth died in infancy from "convulsions during teething".

2). Early history and Development. Birth and early infancy were normal. At the age of 3 she was admitted to Great Ormond Street Hospital, suffering from tuberculosis of the bowels. She was there for several months, and later was carefully supervised at the school clinic in her home town. She was rather backward at school, but the question of deficiency never seriously arose. She found spelling very difficult. Apart from work, however, she got on quite well, and made many friends.

When she left school she was employed for a year in a factory making cigarette lighters, but was dismissed because she could not manage the work. She then worked for about 2 years in a sweet factory. She liked this, and got on well with her mates, but soon after

the outbreak of war the factory closed owing to shortage of materials. Her next job was in a factory making electrical equipment. She disliked the work and the girls, whom she accused of teasing her, and repeating anything she said in an annoying way. This was probably true.

In 1941 she had her first breakdown. When she left hospital in 1942, she was placed in more congenial factory work, and kept her job until she was married in 1944.

3). Temperament. She was described as cheerful and lively, fond of dancing and going to the pictures. She was, however, rather childish in her ways. She was always rather inclined to cling to her mother, but this tendency became much more pronounced after the death of her father. She would often ask what would happen to her if her mother died, and grew very worried if her mother were ill.

4). Sexual Life. She had one particular boy-friend from the age of 16, and married him in 1944 while he was still in the forces. She had her first baby in August 1945, but never showed much interest in him, and looked after him in a very haphazard way.

5). Summary of causative factors. There was undoubtedly a strong element of hereditary predisposition. Her previous personality was not typically schizoid, but was immature. Her illness as a child and the subsequent need for care presumably accentuated her attitude of dependence. Her first breakdown occurred while she was working in uncongenial surroundings. Her second was connected with the birth of her child, in cramped quarters belonging to relations in a part of Kent



which suffered severely from flying-bomb attacks. Her husband was away in the forces.

#### CLINICAL MANIFESTATIONS.

In October 1941 she was noticed to be tired and irritable. She would not get up in the mornings, and complained that other girls at work were talking about her. When pressed, she said that they accused her of being dirty and of smelling. Then she began sniffing her food before eating, as she thought she was going to be poisoned. One day she ran home from work in an excited state. She sang continually after that, and said there were stink-bombs all around her. She also said she could hear voices talking to her all the time. She was admitted to Barming Heath Hospital under certificate.

On examination, she was indifferent to her environment. Although excited and overactive, she showed no emotional warmth, and no acceleration. She frequently grinned and grimaced to herself for no apparent reason, and there was considerable incongruity between her emotional reactions and the current of spoken thought. Her hallucinations and ideas of reference soon faded, to be replaced by a vague thought content which she made no effort to communicate. She had frequent impulsive outbursts of a mischievous kind, but was never seriously aggressive or destructive. She was regarded as a schizophrenic of the hebephrenic type. Apart from a brief spell at home early in 1942, she remained

in hospital until September 1942.

She then remained fairly well until the birth of her child in August 1945. After that, she gradually lost interest in her environment, and could not cope with her everyday tasks. She became strange in manner and erratic in conduct, and was eventually admitted to Barming Heath Hospital under certificate in December 1945. Her condition was similar to that on her first admission, but more severe. Her indifference to her surroundings and appearance was more profound, and she required supervision with her toilet and diet. Her hallucinations did not fade; she continued to hold disjointed conversations with the "voices". She was intensely manneristic and her speech was quite disconnected, with a noticeable tendency to neologisms. She was most erratic and impulsive in conduct, but soon settled down to simple routine occupation. She slowly deteriorated during the time which elapsed before electro-narcosis was tried. She became extremely fatuous and manneristic, her speech degenerated into a word-salad and her habits became faulty at times.

#### DIAGNOSIS.

Physical and serological examination showed nothing significant. The diagnosis was not in doubt when electro-narcosis was administered. The pre-occupation with hallucinations, the silly mannerisms, mild impulsiveness and deterioration to a vegetative state all indicated schizophrenia of the hebephrenic type.

TREATMENT. She was given 12 treatments by electro-narcosis, starting on 26/2/48. They were given three times a week, with atropin pre-medication only. The electrodes were placed temporally and the average coma-dose was 85 mA. No difficulties were encountered.

#### RESULT.

She showed no change for better or worse as the result of electro-narcosis.

DURATION OF ILLNESS. She had been ill for 2 years and 6 months when electro-narcosis was begun.

AETIOLOGY AND PSYCHOPATHOLOGY.

1). Family History. She came of a working class family. Her father and mother were alive and well. The patient was the eldest of the family. A younger brother and sister were quite normal and full of life. There was no family history of nervous or mental disorder.

2). Early history and development. Her infancy and early life were normal. She was bright at school, and had a happy home life. When she left school she had a newspaper round, and secured a number of new customers for her employer. She then worked as a counter-hand in the N.A.A.F.I. in her home town, until she married at the age of 20. She liked the work and got on well with the other girls. After her marriage she went to live in the north of England and in 1942 was directed to work in a factory. She disliked the feeling of being shut in, got across the foreman and was unhappy. Her health was not very good and after a year she was released on a medical certificate. She then did a number of daily domestic jobs and liked the work. After the war, she and her husband returned to her home town. After a spell in lodgings they squatted in a disused hut in an encampment. Conditions were better than was usual in such circumstances. The couple had a room completely to themselves, and the patient got on well with her neighbours.

3). Temperament. She was always rather the "odd one out" in her family; though she got on quite well with them she adopted a very independent attitude to them



when older. She got on well with her workmates, and kept in touch with several of the girls for a considerable time after she had ceased to work with them. From an early age she could not stand criticism, and took offence easily. She was very slow to forget an annoyance. In contrast to the rest of her family, she was mistrustful of strangers, and always read her Bible regularly.

4). Sexual Life. Her marriage was happy; her husband seemed a decent young man, genuinely fond of the patient. He was a merchant seaman until the end of the war, when he got a shore job as a builder's labourer. There were no children.

5). Summary of Causative Factors. Although certain schizoid tendencies could be discerned in the patient's previous personality, these were hardly sufficiently pronounced to account satisfactorily for her breakdown, especially as there was no obvious precipitating factor. Her condition was therefore labelled "Endogenous".

#### CLINICAL MANIFESTATIONS.

Early in March 1947, the patient told her husband that during the night, when she was not asleep, she had seen a vision of Christ, who spoke to her saying "The Kingdom of Heaven is at hand". With her husband's approval she told the vicar about this experience, but was unsatisfied with what he had to say to her. Shortly afterwards she got in touch with the sect of Jehovah's witnesses. One of them visited her on

Good Friday, told her that the world would end in 25 years and left her three religious books. She was much frightened, and spent the week-end trembling and talking of these books. On Easter Monday, after a sleepless night, her husband burned the books, with temporary relief for the patient. Soon afterwards, however, she relapsed into an uneasy, apprehensive state in which she talked vaguely about having faith. Her husband called in the doctor, who prescribed outdoor exercise. Soon, however, she became too restless to be controlled, and was admitted to Barming Heath Hospital.

On examination she was intensely manneristic. She grinned and grimaced to herself continually, and adopted strange attitudes which she held for long periods. She was indifferent to her environment, and required supervision as regards her diet and toilet. There was severe flattening of affect, and great incongruity between her emotional responses and the current of spoken thought. Her speech was incoherent and disconnected and occasionally neologistic. She was vividly hallucinated, saying that she could hear the voices of spirits as well as that of her absent husband. She said that her mind was continually worked by someone else, so that she could not control her own actions. At times she was somewhat restless and impulsive in an apparently aimless way. She was incapable of social activity or useful occupation.

She showed no essential change before electro-

narcosis was begun, except that she was able to do a little simple routine work under close supervision.

#### DURATION OF ILLNESS.

DIAGNOSIS. Physical and serological investigations revealed nothing significant. In her more accessible moments she showed no clouding of consciousness, so a confusional state of organic origin was excluded. Her emotional reactions and mental content were never suggestive of depression. In fact, with her preoccupation with hallucinations, florid mannerisms, mild impulsiveness, and rapid progression to a vegetative state, she displayed a typical picture of schizophrenia of the hebephrenic type.

#### TREATMENT.

She was given a course of 12 treatments by electro-narcosis, three times weekly, starting on 26/2/48. She received atropin pre-medication only. The electrodes were placed temporally and the average coma-dose was 95 mA. No difficulties were encountered.

RESULT. At the end of her course of treatment she was slightly brighter and more interested in her environment. Her hallucinations and ideas of passivity were no longer present. She was mixing more with others, and showed a greater capacity for work. In 6 weeks, however, she regressed to her condition before treatment. Eight months after the end of her course of treatment

her husband ordered her discharge from hospital.  
She had derived no benefit from electro-narcosis.

#### DURATION OF ILLNESS.

She had been ill for approximately one year when  
electro-narcosis was begun. According to the evidence,  
her illness began in March, so the duration was taken  
as under one year.

#### 3). Early History and Development.

Her early childhood  
was uneventful. She was rather dull at school, but  
there was no question of definite mental deficiency.  
She worked in domestic service and at various factory  
jobs until she married. She gave quite good service,  
but tended to be slow over her work.

#### 4). Temperament.

She was said to have been "nervy"  
since quite early in childhood. She was never very  
assertive and showed little initiative, being content to  
do anything suggested by more positive people.

#### 5). Sexual Life.

She did not mix much with boys or men  
before her marriage early in 1935. Prior to this her  
husband began after a few months. They lived in Scot-  
land, which the patient disliked very much. She had a  
baby in January 1937, after which she became irrespon-  
sible in her behavior and childish in her ways. In  
February 1937 she turned up with her baby but without  
warning at her mother's house in Kent. Soon afterwards  
her husband came and took the child back to Scotland.  
She raised no objection and had, in fact, shown no inter-  
est in it at all. A separation from her husband was



Case 15. Female. Admitted 21.8.47. Age 23.

AETIOLOGY AND PSYCHOPATHOLOGY.

- 1). Family History. Her only brother had a schizophrenic breakdown from which he made a good recovery about two years before the patient became ill. The mother, a sensible working class woman, said that no other relatives had suffered from nervous or mental disorders.
- 2). Early History and Development. Her early childhood was uneventful. She was rather dull at school, but there was no question of definite mental deficiency.. She worked in domestic service and at various factory jobs until she married. She gave quite good service, but tended to be slow over her work.
- 3). Temperament. She was said to have been "nervy" since quite early in childhood. She was never very sociable and showed little initiative, being content to do anything suggested by more positive people.
- 4). Sexual Life. She did not mix much with boys or men before her marriage early in 1946. Friction with her husband began after a few months. They lived in Scotland, which the patient disliked very much. She had a baby in January 1947, after which she became irresponsible in her behaviour and childish in her ways. In February 1947 she turned up with her baby but without warning at her mother's house in Kent. Soon afterwards her husband came and took the child back to Scotland. She raised no objection and had, in fact, shown no interest in it at all. A separation from her husband was

arranged at that time.

5). Summary of Diagnostic Factors. A degree of hereditary constitutional predisposition could fairly be assumed. She was also a rather simple and unintelligent girl, whose actual breakdown was precipitated by marital stress, childbirth and parental responsibilities for which she was quite unfitted.

CLINICAL MANIFESTATIONS. Her illness began after the birth of her baby. After her husband returned to Scotland she became apathetic, lost interest in her appearance and refused to go out. She gradually deteriorated until she was content to stay in bed without washing or feeding. The doctor was called in and she was admitted to Barming Heath Hospital under certificate.

She was abstracted and indifferent to her environment. It was impossible to gain her full attention at any time; her gaze wandered round the room and she answered questions in an off-hand way, almost at random. She often smiled to herself and there was marked incongruity between her emotional reactions and the current of her spoken thought. Her affect was shallow and facile. She showed no appreciation of the fact that she was separated from her husband and merely laughed inanely when asked if she would like to see her child again. She often smiled broadly to herself, or whispered quietly when she thought she was not observed, although she denied being hallucinated.

The clinical picture changed little during the

period which elapsed before she was given electro-narcosis, except that she admitted being hallucinated. The content of her thought remained difficult to assess, as she was so uncommunicative.

DIAGNOSIS. Clinical and serological examinations revealed nothing abnormal. On admission, the possibility of a prolonged reaction of toxic or exhaustive origin was considered. She showed no clouding of consciousness and no increased responsiveness to impressions. Depression was excluded as her emotional reaction was one of apathy, and positive grounds for the diagnosis of schizophrenia were present in abundance. The rapid regression to an inactive state, combined with explosions of silly laughter and preoccupation with hallucinations, indicated the hebephrenic subtype.

TREATMENT. She was given twelve treatments by electro-narcosis, three times weekly, starting on 26.2.48. She received atropin premedication only. The electrodes were placed temporally and the average coma dose was 90 mA. No difficulties were encountered.

She had a second course of thirty-two treatments, starting on 1.6.48., three times weekly. She had sodium amytal and atropin premedication. The electrodes were placed frontally and the average coma dose was 150 mA. Again no difficulties were encountered.

RESULT. The improvement at the end of her first course was dramatic. Her interest in her appearance and

environment revived. Her affective responses were much less shallow and her hallucinations were no longer present. She was still uncommunicative and vague in her thought content but her manners and silly laughter were hardly to be seen. She was sociable and attended church and entertainments, and worked usefully in the ward and the occupation centre. She impressed the nursing staff as being well on the way to a complete remission, but unfortunately she quickly relapsed about six weeks after the end of treatment.

Her second course produced no appreciable change, and five months after it she was fatuous, manneristic, echolalic and lost to reality.

DURATION OF ILLNESS. Reckoning from the birth of her baby, this was one year and one month at the time electro-narcosis was started.



Category 4. No 9.

CASE 17. Female. Admitted 13.12.45. Age 19.

AETIOLOGY AND PSYCHOPATHOLOGY.

1) Family History. She was an illegitimate child; her mother hardly knew her father, but thought there was no history of mental disorder on either side.

2) Early History and Development. She lived with her grandparents until she was nine years old. She was bright, forward in learning to walk and talk and was an easy child to bring up. When she was nine she went to live with her mother, who by then had married. The man was unkind to her, but she did not appear to notice. Later the marriage failed and the mother took the girl to live with her. Her school record was good; she won a scholarship to the Grammar School and there passed the Junior Oxford examination. She left school at seventeen and tried various jobs but did not succeed at any of them. Her ambition was to train as a nurse, but her work was very slow and the theory was too much for her. She was very upset when told she was unsuitable for training. She then tried clerical work and was in the A.T.S. for several months, before being discharged as useless, even in the cookery line.

3) Temperament. She was always a moody child and a poor mixer. Until well into adolescence she had screaming fits if she did not get her own way. All her movements were slow; she took a long time to wash and dress herself but went on until everything was to her liking. She "lived in the clouds" and ignored current

events, including the war. She was extremely literal-minded, had no sense of humour and never admitted she was in the wrong. She was secretive and showed no emotional reaction either to pleasant or unpleasant happenings, including physical pain. She was secretive, and never volunteered information on any subject.

4) Sexual Life. She never showed any interest in boys and appeared to her mother to be prudish. When in hospital she told a story of having misconducted herself sexually with a married man while she was in the A.T.S. Although this could not be confirmed, she never developed delusions, so it may well have been true.

5) Summary of Causative Factors. Her case appeared to be an excellent illustration of Adolf Meyer's theory of "habit deterioration", described by Gillespie (1938). Her illness indeed appeared to be nothing more than the result of the accumulation of morbid traits, themselves the "inevitable and cumulative result of persistent maladjustment with increasing frustration and dissatisfaction and consequent further withdrawal into the self". There was barely even the "impression of discontinuity between the shut-in personality and the disease" mentioned by Gillespie (ibid).

CLINICAL MANIFESTATIONS. Her progress from a shut-in adolescence to psychosis was gradual and free from crisis.

The trait of wanting everything "just-so" however long it took her, was the main cause of her failure as a nurse. When on night duty, she woke her patients at 2.0 a.m., to give herself time to get her work done. There may have been some acceleration in her deterioration after she was discharged from the A.I.S. She became noticeably more self-absorbed and dreamy, and refused obstinately to do anything she was asked to do.

On admission to Barming Heath Hospital in December 1945 she was content to lie in bed all day doing nothing for herself at all. She made no attempt to converse and usually answered questions monosyllabically. More often than not her replies were irrelevant or incorrect. She grinned and grimaced to herself for no apparent reason. As she was so inaccessible, it was impossible to elucidate her mental content. Narco-analysis failed to reveal anything significant.

It was not until she had been in hospital for five months that any light was shed on her thought-processes. By that time her interest in her environment had revived slightly and she was capable of useful routine work if closely supervised. She then said that before her narco-analysis she had heard the voice of a doctor giving her helpful advice. After the investigation he had disappeared, to be replaced by the voice of her mother, who told her everything she had to do.

Her condition remained unchanged, so in January 1947 she was given a course of nine E.C.T. treatments,

without visible effect. She spoke of her hallucinations as "whispers"; although still capable of a little routine work, her emotional failure was profound. No significant further change occurred before electro-narcosis was used.

DIAGNOSIS. Important physical factors were excluded by clinical and serological investigation. About three months after her admission the possibility that she was fundamentally a depressive was raised when she admitted to feelings that she was "horrid" and was treated too well for such a person as she was. Her emotional reactions were never depressive, however, and shortly after the above revelation, she told the story of her mis-conduct with the married man. She may, therefore, have had some guilt feelings associated with real or fantastic sexual activity, but the whole picture admitted of one interpretation only - schizophrenia of the simple type.

TREATMENT. She was given twelve treatments by electro-narcosis, three times weekly, starting on 26.2.48. She received atropin premedication only. The electrodes were placed temporally and the average coma-dose was 90 mA. No difficulties were encountered.

RESULT. At the end of her course she was slightly brisker and showed a little increase in spontaneous activity. She said she no longer heard the "whispers",



Category 4. No 10.  
Case No. Female. Admitted 8.2.47. Age 42.  
and her work showed signs of improved persistence and concentration. Within six weeks, however, she had gone back to her state before electro-narcosis. Ten months after treatment there was no further change in her condition.

DURATION OF ILLNESS. The only point in time with any claim to be regarded as the start of her illness was October 1945, when she was discharged from the A.R.S. Her conduct deteriorated shortly afterwards, resulting in recognition of her abnormal state. She had therefore been ill for two years and four months when electro-narcosis was started.

The patient and other members of the family were very close and lived up in great love of their father, but later came to feel that he bullied their mother, whose side they took. The patient herself was a healthy, happy child, a "tomboy" who failed to get a satisfactory secondary education partly owing to her parents' attitude. Later she regretted her own failure, but after leaving school at 14, she went to evening classes and became a very efficient shorthand typist. She then worked for over 30 years with the same firm. She was happy in her job; her employers treated her well and thought highly of her.

3. TEMPERAMENT. She was described as friendly, generous and good tempered. She played tennis and was fond of dancing; as she grew older she developed a taste

Category 4. No 10.

Case 20. Female. Admitted 6.3.47. Age 42.

AETIOLOGY AND PSYCHOPATHOLOGY.

1. Family History. The father was a dominating personality. Described as an "upright" man, he was full of pride in and ambition for his family. The mother was a cheerful, effervescent woman, so not unnaturally there was constant marital friction. There were six children, the patient being the second youngest. The sister immediately older than the patient was in the Mandsley Hospital in 1930 for a year with a depressive illness.
2. Early History and Development. The father was a press proof-reader and money was distinctly short. The patient and other members of the family near her in age grew up in great awe of their father, but later came to feel that he bullied their mother, whose side they took. The patient herself was a healthy, happy child, a "tomboy" who failed to get a scholarship for secondary education purely owing to her carefree attitude. Later she regretted her own failure, but after leaving school at 14, she went to evening classes and became a very efficient shorthand typist. She then worked for over 20 years with the same firm. She was happy in her job; her employers treated her well and thought highly of her.
3. Temperament. She was described as friendly, generous and good tempered. She played tennis and was fond of dancing; as she grew older she developed a taste

for gardening. She had a highly developed sense of duty towards her parents and family.

4. Sexual Life. She was friendly with boys and men, but only had one serious love affair, during her twenties. She fell in love with a fellow employee who was engaged to a friend of hers. He returned her feelings, but she thought it would be mean to take him away from her friend, and refused to pursue the affair. She showed no subsequent self-pity or tendency to avoid men. She felt very dominated by her father and was very aware of the fact that her mother had had a "raw deal" in her married life. She often facetiously remarked that she would marry if she could find another man like her eldest brother.

5. Summary of Causative Factors. The father was probably a psychopath and there may have been a hereditary, constitutional element. She had a very difficult during the war. The house was rendered temporarily uninhabitable by blast on four occasions, and more seriously damaged on a fifth. The patient was living with her parents, who were getting old. She found the responsibility very wearing, quite apart from the work involved in keeping them comfortable in an Anderson shelter. When the war was over her mother fell ill; then her father developed cancer and died at the end of 1945; after that her mother showed characteristic signs of senile dementia and was a great trial until she too died in October 1946. Then the patient herself began to show symptoms. Undoubtedly

her sense of duty, which may have been a pathological result of father domination, caused her to carry on when others would have eased up.

CLINICAL MANIFESTATIONS. From October 1946 onwards she was tired, irritable and touchy. She slept badly was very jumpy and had frequent bouts of sobbing. She spent her week-ends with a sister, and most of the time she slept in an armchair. She began to express curious ideas about a neighbour, saying that he was intending to rob her. At the end of February she went to her brother's house and asked him to call in the police to deal with this neighbour. She was then admitted to the observation ward, and then transferred to Barming Heath Hospital under certificate.

She was restless and overactive. She frequently clutched members of the staff in an obvious state of panic. She woke during the night and shouted phrases such as "Look out", and "Get under the stairs". She also shouted for "Leslie" who was a neighbour to whom she used to turn for help when in difficulty during the blitz and the buzz-bomb attacks. She was not elated or accelerated, but was confused, disoriented in time and defective as regards recent memory. In view of the clouding of consciousness, vivid hallucinatory experience and nocturnal aggravation, she was regarded as suffering from a confusional state due to exhaustion.

About a fortnight after admission she was more restful and appeared to be regaining touch with her



surroundings, so hopes were raised of an early satisfactory outcome. These were, however, disappointed. Her affect gradually became shallow and subject to sudden unpredictable changes. Her conduct became irresponsible and one day she was found hiding under a table outside her room, grinning to herself in an inane way. She began to interfere with others and developed a puzzled manner, which was found to be associated with thought blocking. She was seen muttering to herself when she thought herself unobserved and her speech became disconnected and inconsequent. Gradually a definite pattern of alternation between phases of mild excitement and resistive stupor became apparent and the diagnosis was revised to one of katatonic schizophrenia.

DIAGNOSIS. Important physical factors were excluded by clinical and serological investigations. Once the recurrence of bouts of excitement was established, the possibility of mania was considered; differentiation was, indeed, a matter of considerable difficulty, and was only achieved after long and careful observation. She showed no real elation and but little acceleration. She did not show flight of ideas, changing associations or rhyming; her speech showed disjointed incoherence, with the use of crude symbolism and telegraphic utterances. She showed no lability of mood from moment to moment; in each particular phase her mood was remarkably constant until her phase altered. She was abstracted and indifferent to her environment and did not react to it

in the distractible manner of a maniac patient. She showed no real emotional warmth, and even at her best showed a curious form of negativism. If asked a question, she gave a full but irrelevant answer, which she ended with a pleased snort, as though to say "There, that foxed you!"

TREATMENT. She received a first course of twelve treatments by electro-narcosis, three times weekly, starting on 28.2.48. She received atropin pre-medication only. The electrodes were placed frontally and the average coma-dose was 90MA. No difficulties were encountered.

She had a second course of 24 treatments, three times weekly, starting on 1.6.48. She was given atropin and sodium amytal premedication. The electrodes were placed frontally, and the average coma dose was 140 MA. No difficulties were encountered.

RESULT. During her first course she improved very rapidly and was at her best after four electro-narcoses had been given. She then became increasingly fatuous and excitable, and by the end of the course, no benefit was visible.

During her second course she showed very slow but steady improvement. When it was over, she was no longer alternating between excitement and negativism and was capable of a little work under supervision. She was, however, facile and shallow in affect, irresponsible in attitude and quite vague in her thought content.

On 31.8.48, her relatives ordered her discharge against medical advice. Just over a month later she was re-admitted, and during the following weeks the phasic alternation reasserted itself. She was not improved at all.

DURATION OF ILLNESS. She had been ill for one year and three months when electro-narcosis was started.

Before this illness he was quiet, but afterwards was very lively and gay.

Early History and Development. His father's

work as a technician involved frequent moves around

the country, so the patient's early life was somewhat

unstable. He was an average scholar, and left

school at 14 to become a technician himself. As he

worked at the Royal Arsenal he was not called up

during the war. Before his first breakdown in 1946

he had been on night work for a year, doing 12 hours

a day, seven days a week. He was also a part-time

student in the Medical Fine Service. The father

of his mother had a very high opinion of his work.

Personality. From an early age he was quiet

and thoughtful. He had few friends and

usually went home immediately after work. As a

life very serious, and inclined to worry over

trivial details, his responsibility was

considerable. He was a

golden rule of conduct in

with apparent ease.

Case 25. Male. Admitted 11.11.47. Aged 28.

AETIOLOGY AND PSYCHOPATHOLOGY.

1. Family History. There was no known case of alcoholism, epilepsy or psychosis in the family. His father was alive, healthy and working at the age of 69, but his mother was dead from an unknown cause. There was a curious story that his younger brother was discharged from the Army owing to cerebral haemorrhage. Before this illness he was quiet, but afterwards was very lively and gay.

2. Early History and Development. His father's work as a toolmaker involved frequent moves around the country, so the patient's early life was somewhat unsettled. He was an average scholar, and left school at 14 to become a toolmaker himself. As he worked at the Royal Arsenal he was not called up during the war. Before his first breakdown in 1944 he had been on night work for a year, doing 12 hours a day, seven days a week. He was also a part-time fireman in the National Fire Service. The foreman of his shop had a very high opinion of his work.

3. Temperament. From an early age he was shy, quiet and thoughtful. He had few friends and habitually went home immediately after work. He took life very seriously, was inclined to worry over trifles and felt responsibility keenly. He was a moderate smoker and abstemious with alcohol. He seldom went to dances but played football on Saturdays with apparent zest.



4. Sexual Life. He married a pleasant and intelligent young woman in 1941 and a baby girl was born during 1943. The wife was at all times cooperative and helpful but admitted that sexually the marriage was not always satisfactory, as she was cold and wanted intercourse less frequently than her husband. He was very considerate about this, but occasionally said she did not love him enough.

5. Summary of Causative Factors. As there was no evidence of hereditary or constitutional factors, the period of early development appeared significant. The constant change of social environment must have been highly adverse to a shy boy, throwing him back on the family circle at a time when he should have been making outside contacts. There was a suggestion of undue domination of the family by the father, still hale and working at 69, but with two quiet sons, one of whom actually followed the father's trade and broke down while attempting to work harder than any average conscience would dictate, even during a war. The patient's attitude to his wife was also somewhat immature, so the basic situation in this case appeared to be that of a man unfitted by his early experience for the responsibilities of family life.

CLINICAL MANIFESTATIONS. He was first admitted to hospital under certificate on January 11th, 1944. He had been ruminating rather gloomily on politics and religion for several years, but one month before admission became interested in the sect of "Jehovah's

Witnesses". He read his bible avidly and was admitted to hospital in a confused excited state, in which he thought God was on earth, and he was the son of God. He had vivid hallucinations of communications from God, and showed much perplexity and thought-blocking. He was sufficiently impulsive and over-active to require treatment in a single room.

A significant incident occurred one month after admission. He rushed impulsively out of his side-room while the ward fire was being made up, thrust his hand through the open guard into the fire, declaiming "If thy right hand offend thee.....". Later he explained that he was trying to expiate the sin of self-abuse, in which he had indulged as a boy. His hand was not seriously hurt.

He made slow progress without shock therapy, but had many relapses and short-lived remissions until in March 1945, his delusions had completely receded and his conduct was stable. He was discharged under Sec. 79 of the Lunacy Act upon the application of his wife. He was diffident and showed considerable thinning of affect. His thought content was vague and idiosyncratic, so he was not regarded as recovered.

He was readmitted on 23.5.46, under certificate. He had been working until the day before admission, when he jumped through a first floor window without being seriously injured. He explained that God had given his wife and daughter certain qualities which he lacked, but desired. He believed that by jumping

through the window he would prevail on God to give him these qualities. He denied any suicidal intention, as he had heard a voice telling him there was no such thing as death. He was preoccupied with hallucinatory experiences and was virtually indifferent to his environment. Compared with his previous admission he showed many more curious mannerisms, grinning, pouting and laughing explosively at frequent intervals. His thought content had grown appreciably more bizarre.

As he had shown no spontaneous improvement by 10.7.46, electrical convulsion therapy was started. Treatment was stopped on 26.7.46. after 8 convulsions. He was not then hallucinated and was less manneristic and erratic in conduct. His improvement continued, and on 5th September he was again discharged upon the application of his wife, his condition being very similar to that on his previous discharge.

On November 11th 1947 he was admitted for the third time under certificate. His mannerisms and affective failure were more pronounced, his speech more incoherent and his thought content more bizarre. He said that he could hear God telling him that evil was to be banished from the world, and that his young daughter was to play a vital part in its abolition. His emotional reactions were unrelated to the current of spoken thought and he believed his mind was influenced by external agencies.

DIAGNOSIS. By the time electro-narcosis was started

on 27.2.48, the diagnosis of schizophrenia of the hebephrenic type was not in doubt. The affective failure and thought disorder were characteristic of Schizophrenia. The preoccupation with hallucinations, the bizarre thought-content, silly mannerisms and progressive deterioration all suggested the hebephrenic type. Other possibilities requiring formal exclusion were recurrent depression and an organic syndrome. At no time, however, was he depressed; he was not retarded although he showed blocking of thought. In fact the only possible peg on which to hang a diagnosis of depression was his vague idea of unworthiness that his wife and daughter had some quality which he had not. Organic disease was excluded by physical and serological examinations, which revealed nothing abnormal.

TREATMENT. Between 2.12.47 and 15.12.47 he had eight electrically induced convulsions, with some benefit lasting until early February 1948. By that time his condition was the same as on admission. He was given 12 treatments by electro-narcosis, three times weekly, starting on 27.2.48, without premedication of any kind except atropin. The temporal position of the electrodes was used and the average coma dose was 100 MA. No untoward or unusual incident occurred.

RESULT. At the end of his course of electro-narcosis his delusions could not be elicited and he denied being hallucinated, but he occasionally muttered to himself



when he thought he was unobserved. His performance at work improved, but his social inertia was unchanged.

Assessment nine months after the end of treatment showed that his mannerisms, delusions and hallucinations were again present; no improvement was claimed as the result of electro-narcosis.

DURATION OF ILLNESS. On the basis of a statement by his wife that his condition took a turn for the worse early in August 1947, the duration of the third attack was computed as seven months at the time electro-narcosis was started.

11. Temperament. He was very quiet and lacked energy and enterprise. He made few friends, but was quite ready to fall in with social activities initiated by others.

12. Sexual Life. He had three girl friends before he entered the Navy, but the affairs petered out through sheer loss of interest, mainly by the patient.

13. Summary of Characteristic Features. He showed clear signs of an inadequate and schizoid personality from an early age. His social adaptation during adolescence left much to be desired. Presumably the demands of service life

Category 4. No 12.

CASE 26. Male. Admitted 12/6/45. Age 25.

ETIOLOGY AND PSYCHOPATHOLOGY.

1). Family History. He came of a working class family in which there was no history of mental or nervous disorder. He had three brothers and two sisters, all alive, well and normal.

2). Early history and development. Birth and infancy were normal. He was rather slow at school, but the question of his being mentally defective never arose. His father died while the patient was still at school, When he left, therefore, he was forced to take the first job which offered in order to earn. He drifted from one unskilled activity to another, mostly in factories, until he joined the Navy in the Spring of 1941. His career in the service was not very distinguished. He was discharged on medical grounds following the development of a duodenal ulcer after serving for 2½ years. His last year in the Navy was spent in hospital.

3). Temperament. He was very quiet and lacked energy and enterprise. He made few friends, but was quite ready to fall in with social activities initiated by others.

4). Sexual Life. He had three girl friends before he entered the Navy, but the affairs petered out through sheer loss of interest, mainly by the patient.

5). Summary of Causative Factors. He showed clear signs of an inadequate and schizoid personality from an early age. His social adaptation during adolescence left much to be desired. Presumably the demands of service life

were more than he could meet, while his year in hospital probably accentuated his schizoid tendencies.

#### CLINICAL MANIFESTATIONS.

He was noticed to be behaving queerly when he came out of the Navy. He was listless, apathetic and quite without interest in his usual activities. Definite symptoms were not apparent, however, until December 1944, when he had an attack of breathing hard, in which he was seen to be sweating and shaking. He made no reply when efforts were made to get him to speak. After that he had frequent spells in which he stared vacantly into space. Sometimes these would occur when he had a piece of food half way from his plate to his mouth. He began to laugh and make strange faces, and then said other people were talking about him and mocking him. He was admitted to Barming Heath Hospital in May 1945, but left against advice almost immediately. A month later he was admitted once more, but under certificate.

On examination he was dull, indifferent to his environment, and dependent on nursing supervision as regards diet and toilet. He grinned and grimaced to himself for no apparent reason, and showed gross incongruity between the current of spoken thought and his emotional reactions. There was profound affective failure and he was almost mute. He admitted, however, that he frequently heard voices, some friendly, some reiterating the word "Mental". He believed other people were discussing him in a disparaging way, and

on occasion was mildly impulsive. He made no effort to make social contacts, and was incapable of useful work. In August 1946, as he had made no spontaneous progress whatever, he was given a course of 7 electrically induced convulsions. He was rather brighter and more interested in his environment for about 6 weeks and then relapsed into his former state.

His condition continued to deteriorate slowly up to the time when electro-narcosis was tried. He was then intensely manneristic, and pre-occupied with hallucinatory voices which "Talked a lot of jumble". His speech was neologistic and he adopted curious poses for long periods. Flexibilitas cerea could be demonstrated.

#### DIAGNOSIS.

Physical and serological examination revealed nothing significant. The diagnosis was not in doubt when he was treated by electro-narcosis. When first admitted, organic delirium was excluded as there was no clouding of consciousness. There was never any depressive emotional reaction or mental content. The preoccupation with hallucinations, silly mannerisms, mild impulsiveness and rapid progress to a vegetative state were characteristic of the hebephrenic type of schizophrenia.

#### TREATMENT.

He was given 12 treatments by electro-narcosis, three times weekly, starting on 1/3/48. He received pre-medication by atropin only. The electrodes were placed



temporally and the average coma-dose was 90 mA. No difficulties were encountered.

He was given a second course of 19 treatments, three times a week, starting on 7/6/48. For the first 9 he received sodium amytal and atropin pre-medication. Then, as he complained of memory of the initial shock, he was given thiopentone before all subsequent treatments. The electrodes were placed frontally and the average coma-dose was 145 mA. No further troubles were encountered.

#### RESULT.

There was considerable improvement after his first course. He was much brighter and more interested in his environment. His mannerisms were much less noticeable, and there was no evidence of hallucinations. He began to make a few social contacts, and was capable of useful occupation under supervision. Two months later, as he showed signs of retrogression, he was given the second course. He showed little positive response, but perhaps his downward progress was slowed down. Six weeks after his second course was over, the only improvement left was a willingness to work at simple routine jobs. Even that did not last, and five months after the end of electro-narcosis he had relapsed to his former state.

#### DURATION OF ILLNESS.

He had been ill for 4 years and 3 months when electro-narcosis was begun.

Category 4. No 13.

CASE 27. male. Admitted 22.6.46. Age 34.

ETIOLOGY AND PSYCHOPATHOLOGY. So far as could be ascertained he was an only child whose parents were dead. No contact was ever established with blood relations. The patient denied any family history of mental disorder. As he did so after recovery from one breakdown, and before the next, his statement may have been true. He married shortly before the war, so independent information was only available from that time. Nothing useful about his early life or pre-psychotic personality was discovered. His wife was a sensible woman, but she was only with him for a short time before he went into the Army, where he broke down. She described the marriage as happy, and marital relations as normal and satisfactory, during the short periods when the patient's mentality was normal.

CLINICAL MANIFESTATIONS. In 1942 he had a breakdown while serving in Gibraltar. He refused to give any details himself, and the army furnished no record. After three months in a military hospital he was sent back to this country and discharged from the Army. He returned to work as a postal supervisor to the British Overseas Airways Corporation and showed no signs of abnormality until February 1946. Then, according to his wife's account, he came home from work one day saying that the Kingdom of God had come, and he had a mission to fulfil. The seriousness of

his condition was not fully realised and he was not admitted to hospital until four months later.

When examined, he was overbearing and dictatorial in manner, and said the doctor was presumptuous for daring to speak to him. He said he was the Messiah, the ruler of the world, and demanded his immediate discharge to go to Buckingham Palace, to see the King. From the beginning of his stay in hospital there was evident thinning of affect. He also showed schizophrenic mannerisms and inconsequence of speech. As time passed his affective disorganisation became worse, impulsiveness became more frequent and his mannerisms more pronounced. Although most uncommunicative, he used to stand in corners listening intently and often cocked an ear at the radio loud-speaker when it was switched off. He admitted a belief that other people could read his thoughts and control his actions from a distance. He was unsociable and unemployable until he had electro-narcosis.

DIAGNOSIS. Clinical and serological investigations ruled out important physical factors. The only point at issue when treatment was started was whether he should be classified as a paranoid schizophrenic, or as a more purely paranoid state. The failure of affect, foolish mannerisms and general dilapidation of personality were enough to justify classification as a paranoid schizophrenic.

TREATMENT. He was given twelve electro-narcosis

treatments, three times a week, starting on 27.2.48. He received pre-medication by atropin only. The electrodes were placed temporally and the average coma dose was 105 mA. He showed a strong tendency to have a second convulsion in the later stages of treatment.

RESULT. Immediately after his course of electro-narcosis the change in him was dramatic. His overbearing dictatorial attitude was gone; he was quiet and civil, and showed more interest in his environment. His explosive emotional outbursts no longer occurred. He was much less manneristic, showed no evidence of hallucinations and denied that his mind was read. He said that he could still hold the theory that he was the Messiah, or could dismiss it from his mind at will. He freely admitted that the nearest he had ever been to Buckingham Palace was to work in an insurance office in Buckingham Palace Road. He denied any dealings with Royalty.

This degree of improvement was fully maintained for two months, during which time he made use of social facilities and worked usefully. Then he began to say that he would be going home soon and told his wife to get a house suitable to their station. Gradually his delusions returned, but even ten months after the end of treatment he was still amenable and cooperative. He worked usefully and willingly and still



participated in social activities.

DURATION OF ILLNESS. This was clearly just over two years at the time electro-narcosis was begun.

The patient's mother was alive and well.

5 children in the family, all of whom were well.

1 son was alive and well. There was no history of mental or nervous disorder.

Family History and Present Illness.

The patient's father was alive and well.

The patient was an average person.

She had been married for 10 years.

She was a housewife and worked on her own.

Present Illness. She was described as a

person with a history of being a

person who was not very happy.

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She was described as a person who was not very happy.

She had been married for 10 years.

AETIOLOGY AND PSYCHOPATHOLOGY.

1). Family History. The patient's father was said to have suffered from neurasthenia in the first world war. He was, however, accepted for service in the second war but was eventually discharged on psychiatric grounds. The patient's mother was alive and well. There were 5 children in the family, all of whom except the patient were alive and well. There was no family history of mental or nervous disorder.

2). Early History and Development. Birth and infancy were normal. The patient was an average scholar and then undertook a variety of factory jobs. During the war she worked on armaments.

3). Temperament. She was described as bright and cheerful, with a liking for singing and dancing. She was, however, rather childish in her ways when grown up. Even after her marriage she used to go to her mother's house to sleep if her husband was on the night shift, although she shared a house with her sister and brother-in-law. She was frightened of thunderstorms and inclined to worry unduly about trifles. She took great pride in her appearance and thought a lot about her clothes and hair. She was also very house-proud, and extremely meticulous in everything she did.

4). Sexual Life. Late in 1945 she married a very nice young man, recently demobilised. The couple appeared to be very happy and were very pleased when the patient became pregnant. The baby was expected at the end of September 1946 and arrangements had been made for her

to be confined at home.

5). Summary of causative factors. She was 7 months pregnant when she broke down. Symptoms of her illness first appeared shortly after a severe thunderstorm. Her previous personality suggested a certain inadequacy in dealing with the hard facts of life, and her resistance may have been undermined to some extent during the war, as the areas in which she lived and worked were frequent recipients of enemy attentions.

#### CLINICAL MANIFESTATIONS.

On the night of 27/7/46 she became very restless. The next day she was tearful and went to bed early. She again became restless and could not be controlled by her relatives, so was admitted to an observation ward. There she was wildly overactive, and when first seen by the visiting psychiatrist was cowering stark naked in the corner of a padded room. She was mute, but presented a picture of panic. She was lost to her surroundings and incapable of expressing her intentions, so was admitted to Barming Heath Hospital as a temporary patient on 31/7/46.

On examination she was restless and impulsive in an aimless way. She continually tore the clothes from her bed and rushed out of her room naked unless restrained by sedatives. She was no longer mute, but only shouted incomprehensible jargon. She ignored all questions and could not converse. She was not elated or accelerated and

showed no flight of ideas. She oftened listened and shouted in the corner of her room as though hallucinated. She was faulty in habits and required constant nursing care and supervision.

Her restless grew less severe with the passage of time; otherwise she showed little change before the birth of her baby on 4/10/46. The child was a girl and labour was short and uneventful. During the puerperium the picture changed to one of stupor, with little resistiveness or negativism. As she had made no spontaneous progress, she was given a course of E.C.T. between 28/10/46 and 18/11/46. After 10 convulsions her mental state was much improved. She regained touch with her surroundings and took an active interest in her appearance. Her speech was connected and her activities rational and purposive. Unfortunately this state of affairs only lasted a week, when she suddenly relapsed into stupor. For the first time she showed typically schizophrenic mannerisms. She contorted herself into strange attitudes and often grimaced and giggled. She was more resistive, and her stupor was punctuated by short outbursts of restless, impulsive activity. She had a second course of E.C.T. in January 1947, with an improvement of lesser extent and shorter duration.

No further improvement occurred before her period of temporary treatment came to an end in July 1947, so she was certified. She was then self-absorbed, apathetic and intensely manneristic. Her affective responses were incongruous and her



speech scanty and irrelevant. She was preoccupied with auditory hallucinations and could do little for herself. Her habits were dirty and degraded and flexibilitas cerea could be demonstrated. The tendency to swing between excitement and resistive stupor was still present. She showed little further change before electro-narcosis was tried.

#### DIAGNOSIS.

On admission she was regarded as being in a state of delirium of toxic origin. She had slight albuminuria, but this cleared up before the delivery of her child. The possibility of schizophrenia was not seriously considered until after her first course of E.C.T. when mannerisms and serious resistiveness appeared. Her subsequent history left no doubt as to the diagnosis. She showed neither depression nor elation and her physical and serological examinations revealed nothing abnormal. The predominance of alternating phases of excitement and resistive stupor led to her being classified as a katatonic schizophrenic.

#### TREATMENT.

She was given a course of 12 treatments by electro-narcosis, three times weekly, starting on 6/4/48. She received atropin and sodium amytal premedication. The electrodes were frontally placed and the average coma-dose was 120 mA. No difficulties were encountered.

She was given a second course of 15 treatments, three times weekly, starting on 24/7/48. For the first 4 treatments she again received atropin and sodium amytal premedication, but on subsequent occasions was given thiopentone. The electrodes were placed frontally, and the average coma-dose was 130 mA. No difficulties were met.

#### RESULT.

She showed considerable improvement after her first course of electro-narcosis. She was interested in her appearance and became clean in habits. Affective thinning was still severe, but she talked fairly freely though with some inconsequence. She mixed in a timid way in social activities and showed herself capable of useful work under supervision. Her phases of excitement and stupor no longer occurred.

This degree of improvement persisted for nearly two months. Then she developed a habit of relapsing into neologistic gibberish at the end of a sensible reply to a question. She also displayed a tendency to abstraction, in which state she used to gaze vacantly into space. Her second course of electro-narcosis was administered in the hope of averting an impending relapse. However, she showed no response and deteriorated steadily while the course was in progress. Soon after it was over she was once more in a condition similar to that displayed before her first course of electro-narcosis.

DURATION OF ILLNESS.

She had been ill for 1 year and 7 months when electro-narcosis was started.

1). Family History. - The case of a working mother in an industrial town. The father had died about 18 years ago when the patient was 12, and the mother married a few years ago. The patient had two brothers, one older than herself. There was no history of mental disease.

2). Early History and Development. - The patient was born in a small town in the north of England and had been in the hospital for 18 months. She was well brought up and had been in the hospital for 18 months. She was well brought up and had been in the hospital for 18 months.

3). Development. - She was brought up in a small town in the north of England and had been in the hospital for 18 months. She was well brought up and had been in the hospital for 18 months.

4). Sexual Life. - She got on quite well with her husband and had been in the hospital for 18 months. She was well brought up and had been in the hospital for 18 months.

5). Physical Examination. - She was well brought up and had been in the hospital for 18 months. She was well brought up and had been in the hospital for 18 months.

CASE 33. Female. Admitted 17.2.48. Age 20.

AETIOLOGY AND PSYCHOPATHOLOGY.

- 1). Family History. She came of a working class family in an industrial town. The father had had diabetes for eight years when the patient became ill, and had not worked for a long time. The mother was a stable, sensible woman. The patient had one brother, six years older than herself. He was a normal man and married. There was no history of mental disorder.
- 2). Early History and Development. She was lovely baby; she walked and talked at the normal times. She was bright at school and was encouraged to sit for a scholarship, but refused. She was fond of music, and considerably gifted, but after school she became a hairdresser. She was well thought of by her patrons and employers.
- 3). Temperament. She was described as a gay girl, fond of dancing and music. She sang in a dance-band and won a cup for crooning. She was not solitary and got on well with other girls. She was not mercurial, and showed no abnormal swings of mood.
- 4). Sexual Life. She got on quite well with boys in superficial relationships, dancing and amusements, but never had any special boy friend.
- 5). Summary of Causative Factors. There was no known precipitating factor, and nothing in the history to suggest predisposition. Her illness was endogenous in nature and unexplained origin.



CLINICAL MANIFESTATIONS. She first began to behave in a peculiar way at the beginning of 1947. She became morbidly interested in religion, particularly the kind preached by the sect of Jehovah's Witnesses. She spent her spare time reading books published by them and on Sundays observed a most meticulous ritual. She became indifferent to her former interests and spent much time lounging in a chair with a far-away look on her face. She gave up her hairdressing job as "vanity" and tried a series of others in canteens and factories, but gave them up after a few days each, ostensibly because she objected to the language of the other girls. Finally it became clear that she believed herself to be in direct touch with heaven, as she could hear voices giving her guidance and advice. She was eventually prevailed on to enter Barming Heath Hospital as a voluntary patient on 17.2.48.

Under observation she was slovenly and untidy in manner and habits. She paid little attention to her environment but was erratic in behaviour, though not aggressive or destructive. She would suddenly dash down the ward, stop suddenly in a strange attitude, and stay there until roused. Her speech was curiously disjointed and incoherent; as an example, while talking about vague pains in her head she suddenly blurted out, "I want a bicycle and two pairs of skates". She showed profound apathy and a seriously impaired capacity for emotional response. Hallucinations of hearing were vivid and at times she conversed with imaginary voices.

She believed other people were talking about her and suffering because of her, and also said that her mind was being influenced by other people through thought power. She blamed them for causing some of the curious sensations in her head and body. She expressed ideas of unworthiness about having made many mistakes, and being a poor example of christianity, but without conviction or emotional warmth, like a child reciting poetry homework. She showed little change before electro-narcosis was begun.

DIAGNOSIS. Nothing important was revealed by physical and serological examinations. She showed no clouding of consciousness to suggest an organic origin of her psychosis. She admittedly expressed vague ideas of unworthiness, but was not depressed at any time. The inertia, mannerisms and hallucinations indicated schizophrenia of the hebephrenic type.

TREATMENT. She was given twelve treatments by electro-narcosis, three times weekly, starting on 6.4.48. Before her first four treatments she was given atropin and sodium amytal. Before the next five she had nembutal 0.5 gramme intramuscularly as she was somewhat resistive. For the last three she again had sodium amytal orally in addition to the usual atropin. The electrodes were placed frontally and the average coma-dose was 125 mA. Careful questioning failed to elicit any evidence of memory of the treatment, so her resistiveness was regarded as a schizophrenic symptom. On the last occasion

Category 4. 30.14.

she received nembutal, her pulse was rapid and cyanosis developed. She responded quickly to a lowering of the current level, but nembutal was discontinued to prevent a recurrence.

RESULT. She was neither better nor worse as a result of the treatment. She left hospital, against medical advice, on 30.9.48.

DURATION OF ILLNESS. She had been ill for one year and three months when electro-narcosis was begun.

3) Temperament. Before the war he was said to be a happy, cheerful young man, with many friends. He knew how to enjoy himself and was the life and soul of a party. He was not given to ruminating and kept his troubles to himself.

4) Sexual Life. He was not shy with girls, and enjoyed feminine company, but had no particular girl friends.

5) Summary of Causative Factors. The account given of the family and the patient's personality was probably somewhat superficial and optimistic. There was probably some constitutional weakness, possibly familial, which was brought to light by the stress of war service.

CLINICAL MANIFESTATIONS. While in South Africa he

CASE 36. Male. Admitted 15.3.48. Age 25.

AETIOLOGY AND PSYCHOPATHOLOGY.

1) Family History. The father was a sensible and co-operative working man, and the mother successfully raised a large family. The patient was the sixth of nine children. One was killed in the war, and another was discharged from the Army with neurosis, but the others were all alive and well. There was no other history of mental or nervous disorder.

2) Early History and Development. His infancy was uneventful. As a scholar he was average, and obtained satisfactory school reports. When he left school he had a newspaper round for a short time, and then worked in a local paper mill until he was called up in 1942. He served in North Africa until sent home in 1945 as unfit for service abroad.

3) Temperament. Before the war he was said to be a noisy, cheerful young man, with many friends. He knew how to enjoy himself and was the life and soul of a party. He was not given to fussing and kept his troubles to himself.

4) Sexual Life. He was not shy with girls, and enjoyed feminine company, but had no particular girl friends.

5) Summary of Causative Factors. The account given of the family and the patient's personality was probably somewhat superficial and optimistic. There was probably some constitutional weakness, possibly familial, which was brought to light by the strain of war service.

CLINICAL MANIFESTATIONS. While in North Africa he



appeared before medical boards on several occasions, and was finally invalided home in April 1945. He was demobilised in November 1946, without a pension. He was then noticed to be a changed man. He was restless, lifeless and unable to concentrate. He was advised to see a psychiatrist, but refused, and went back to his old job in the paper mill for six weeks. He then said he could stick it no longer, and after that did no work at all. For rather more than a year he spent his time standing about doing nothing except a very occasional odd job. He complained vaguely of pains in the head and blackouts but expressed a conviction that nothing could do him any good. There was apparently some depersonalisation, as he expressed the idea that he was not himself, and was living in another world. Finally psychiatric advice was obtained and he was admitted to Barming Heath Hospital on 15.3.48.

On examination he showed himself dull, detached and profoundly apathetic. He neglected to take his food, was careless of his appearance and required supervision with his toilet. His speech was inconsequent and disconnected, and often tailed off into silence in the middle of a sentence. He stood about with his head bowed and a puzzled frown on his face, and would remain immobile for hours unless roused. He said he was affected by mental influences which twisted his stomach and altered the nature of his body. Hallucinations were present, of kindly voices telling him to try and do things. He made no social efforts

at all and was incapable of work. He did not improve before electro-narcosis was begun.

DIAGNOSIS. Physical and serological investigations revealed nothing significant. He showed no depressive emotional reaction, only affective failure. His mental content, moreover was schizophrenic, not depressive. The presence of hallucinations and ideas of passivity of a rather bizarre type, together with his mannerisms and inertia, indicated the hebephrenic rather than the simple type of schizophrenia.

TREATMENT. He was given twelve treatments by electro-narcosis three times weekly, starting on 7.4.48. He received sodium amytal and atropin premedication. The electrodes were placed frontally and the average coma-dose was 135 mA. He had one restless narcosis, otherwise no difficulties were encountered.

RESULT. He improved very slightly and very slowly during his course of treatment. At the end he was appreciably brisker and more interested in his surroundings. He took his food, looked after himself and mixed a little with others. He was no longer hallucinated and had lost his ideas of passivity. He still showed profound affective thinning and required constant supervision and stimulation. This degree of improvement persisted for about a month, then he relapsed into the state he was in before treatment was begun.

Category 4, No 17.

DURATION OF ILLNESS. He was first noticed to be abnormal in November 1946. Even though he was probably ill before that date, his illness must be reckoned to have started then in the absence of prior abnormality. He had therefore been ill for one year and five months when electro-narcosis was started.

2) Early History and Development. In the family he was always the "odd one out". He was quiet average at school, and after that was rather a willing worker. He took pride in the fact that he "could not be beaten". After a spell of farm work he became a householder for several years, and was employed as that when he volunteered for the R.A.F. in 1945. While awaiting acceptance his first mental trouble occurred, but after voluntary treatment he rejoined the R.A.F. in 1946. He was posted to the Middle East in 1946, served in Churchill's campaign in the desert and rose to the rank of sergeant. In 1948 he had a second mental illness, was invalided home and discharged from the service without a pension. He had a third mental illness in 1949. Apart from his spells in hospital, he was employed in a series of casual or skilled jobs until January 1947, when he decided to rejoining the R.A.F.

3) Temperament. He was described as a pleasant, even-tempered man, with no more than a touch of mood. He got

CASE 37. Male. Admitted 2.3.48. Age 39.

AETIOLOGY AND PSYCHOPATHOLOGY.

1) Family History. A paternal great-grandmother had a menopausal mental illness, and a paternal uncle died in a mental hospital after a short illness. The patient's father was a "nervous" type, and would not go out alone. The mother was apparently a stable, sensible woman. The patient was the second of five children, the others all being normal.

2) Early History and Development. In the family he was always the "odd one out". He was below average at school, and after that was rather a rolling-stone. He took pride in the fact that he "would try anything". After a spell of farm work he became a bus-conductor for several years, and was employed at that when he volunteered for the R.A.F. in 1938. While awaiting acceptance his first mental breakdown occurred, but after voluntary treatment he entered the R.A.F. in 1939. He was posted to the Middle East in 1940, served in Wavell's campaign in the desert and rose to the rank of sergeant. In 1943 he had a second mental illness, was invalided home and discharged from the service without a pension. He had a third mental illness in 1945. Apart from his spells in hospital, he was employed in a series of casual unskilled jobs until January 1947, when he succeeded in rejoining the R.A.F.

3) Temperament. He was described as a pleasant, even-tempered man, with no undue swings of mood. He got



on very easily with people in a superficial way, and was well liked by regular passengers on his bus. He never sulked or took injuries to heart, and any tiffs between himself and his wife blew over quickly.

4) Sexual Life. He married when twenty years old. His wife seemed a pleasant, sensible, reliable woman with a stronger personality than her husband. She described him as a good husband and father, much concerned to earn good money for the family. He had five children when admitted to hospital in March, 1948, aged 19, 15, 13, 3 and 1. The elder three all obtained scholarships and the eldest, a boy, was in the R.A.F. The wife's confinement with the 13 year old was very difficult, so the patient was extremely anxious during both subsequent pregnancies. He was somewhat dependent on his wife, and certainly disliked the fact that his children turned to her rather than to himself when in difficulty.

5) Summary of Causative Factors. There was probably a hereditary constitutional predisposition to mental illness. His personality was rather odd and apparently immature, though hardly schizoid. His first breakdown was precipitated by worry because all his friends told him he was a fool to join the R.A.F. His second occurred after a year's service in a front-line desert aerodrome, while his third and fourth coincided with his wife's fourth and fifth confinements.

CLINICAL MANIFESTATIONS. When he first broke down he was admitted to Barming Heath Hospital as a temporary patient on 23.11.38. He was dull, apathetic and in-

different to his surroundings. He was inconsequent and dis-connected in speech and showed thought-blocking, which was accompanied by much perplexity. He said that God had told him there was no such thing as marriage. He complained that his wife had tried to poison him, and that he had a disease called the "black pox". Between 13.1.38 and 17.2.39. he was given ten convulsion treatments induced by cardiazol. He disliked the treatment and eventually refused firmly to have any more. He made good progress and was discharged as recovered on 5.3.39.

Few details of his second and third breakdowns could be obtained, except that he had E.C.T. on each occasion and expressed hostile sentiments towards his wife. On the fourth occasion he was in the R.A.F. and was stationed only about twenty miles from home. His son was also at the same station. The father was very anxious about his wife and kept going home without leave and behaving in a very odd way. The son kept him clear of major trouble until May, when the position became impossible. The patient was admitted to a service mental hospital, and remained there until transferred to Barming Heath in March 1948. He was not given any physical therapy. He said that he was the Holy Ghost and could work miracles, and claimed to have visited heaven on numerous occasions to see God. On rare occasions he was aggressive and threatening.

In Barming Heath he showed himself indifferent to his environment, asocial and incapable of useful work.

He showed severe thinning of affect and schizophrenic oddity of manner. He still claimed to be the Holy Ghost and the brother of Jesus Christ and said he had given all his relations miraculous powers. He showed no improvement before being given electro-narcosis.

DIAGNOSIS. Physical and serological examinations revealed nothing significant. The previous personality and the recurrent nature of his symptoms suggested the possibility of mania, but he showed no elation, acceleration, distractibility or other characteristic signs. The affective thinning, oddity of manner and bizarre thought content indicated schizophrenia of the paranoid type rather than a predominantly paranoid type.

TREATMENT. He was given twelve treatments by electro-narcosis three times weekly starting on 7.4.48. For the first six treatments he received sodium amytal and atropin premedication. On four of these occasions the depth of narcosis was inadequate and there was some restlessness. The patient complained of remembering the initial shock of the sixth treatment. He said his head felt burning hot and lights flashed; then there was a roaring sound and he remembered no more. Before his next two treatments he was given intravenous sodium amytal. On the second occasion the depth of narcosis was inadequate in spite of a coma dose of 150 mA. Fortunately no memory was retained, so thiopentone was substituted for the sodium amytal with entirely satisfactory results. No other difficulties were encountered.

Category 4. No 12.

RESULT. After his treatment he was brisker and more alert. He was capable of useful work and a little social activity. His delusions were still present, but he said that he could only use his miraculous powers at home, not in hospital. The change was not sufficiently great for any improvement to be claimed as the result of electro-narcosis.

DURATION OF ILLNESS. He had been ill for one year and one month when electro-narcosis was started.

3) Early History and Development. With the father absent, the mother had to work, and conditions were hard during the patient's infancy and childhood. He was an average scholar. After school he became an errand-boy until called up at the age of nineteen. He fought in Malaya, was captured at Singapore and sent to the Burma railway. He had many attacks of dysentery and was in numerous hospitals while a prisoner. When he came home he was restless and could settle to nothing. He spent his youth going out dancing and having a good time. Then he had various jobs as labourer and shunter on the railway.

3) Temperament. No real light was shed on this. His sister described him as "just ordinary", so he was presumably a simple fellow of rather a commonplace personality.

4) Sexual Life. When he came home in 1945 he was disappointed to find that a girl with whom he had been friendly had married someone else. He seemed to get



CASE 39. Male. Admitted 5.2.48. Age 25.

AETIOLOGY AND PSYCHOPATHOLOGY.

1) Family History. The father left his wife when the patient was quite young. Little was known about him. The mother had a mental breakdown following air-raids in the first world war and required hospital treatment. She was a nervous, fussy and hypochondriacal woman. The patient had an elder sister who was not very intelligent on discerning but was affectionately attached to him.

2) Early History and Development. With the father absent, the mother had to work, and conditions were hard during the patient's infancy and childhood. He was an average scholar. After school he became an errand-boy until called up at the age of nineteen. He fought in Malaya, was captured at Singapore and sent to the Burma railway. He had many attacks of dysentery and was in numerous hospitals while a prisoner. When he came home he was restless and could settle to nothing. He spent his gratuity going out dancing and having a good time. Then he had various jobs as labourer and shunter on the railway.

3) Temperament. No real light was shed on this. His sister described him as "just ordinary", so he was presumably a simple fellow of rather a colourless personality.

4) Sexual Life. When he came home in 1945 he was disappointed to find that a girl with whom he had been friendly had married someone else. He seemed to get

over it quite quickly, and went out with lots of girls in his "good time" phase. He met his future wife in the summer of 1946 and married in December of that year. She was a rather dull and inarticulate girl, expecting her first baby in March 1948.

5) Summary of Causative Factors. There was possibly a hereditary constitutional predisposition to mental illness. The previous personality was hardly an adequate one, probably in part owing to hard conditions during early development. His experiences as a prisoner of war exerted a profound influence on him. The only likely precipitating factor was worry about his impending paternity, but that was a matter of surmise.

CLINICAL MANIFESTATIONS. Apart from his restless behaviour after coming home from the Far East, he showed signs of mental turmoil, such as buying a larger number of expensive psychology books than he could really afford. He did not show signs of frank mental illness, however, until early in January 1948, when he ceased working and stayed at home all day staring into the fire. He became quiet and withdrawn; on one occasion he was found in the bedroom in the dark standing with his face to the wall; on another he was discovered polishing the bedroom mirror with his wife's stockings. He was admitted to Barming Heath Hospital under certificate on 5.2.48.

On examination he was dull, detached and withdrawn from contact with his environment. The most striking feature of his case was the profound

loss of affect. His speech was laconic and his answers to questions usually irrelevant. He frequently smiled to himself in a fatuous way and from time to time gave vent to outbursts of senseless laughter. He admitted hearing voices constantly talking to him, including his wife's, but there was no evidence of delusion formation. As time passed he showed phases of mild overactivity and impulsiveness and claimed that his mind was controlled by outside influences. He made no social advances and was incapable of useful work. There was no spontaneous improvement before electro-narcosis was started.

DIAGNOSIS. Clinical and serological investigations revealed nothing significant. He never showed any confusion, disorientation or defect of memory, so organic delirium was excluded. His emotional reaction and mental content were not depressive, whereas his inertia, preoccupation with hallucinations, silly mannerisms and mild impulsiveness were characteristic of schizophrenia of the hebephrenic type.

TREATMENT. He was given twelve treatments by electro-narcosis, three times weekly, starting on 7.4.48. He received sodium amytal and atropin premedication. The electrodes were placed frontally, and the average coma-dose was 140 mA. No difficulties were encountered.

RESULT. At the end of his course he was rather brighter. His mannerisms were less pronounced, and he denied experiencing his former hallucinations and ideas of passivity. This degree of improvement was

maintained for two months, after which the progress of his disease was resumed. In September 1948 he made a sudden, unprovoked attack on a male nurse, and in December began to express the idea of being under remote electrical control.

DURATION OF ILLNESS. He had been ill for three months when electro-narcosis was started.

2) Early History and Development.

He was a small, mischievous boy, but always reacted strongly against his father's discipline and criticism, often weeping bitterly about it. He seemed to get on well with other boys and reached the top standard. In 1936 and February 1938 he took various jobs without settling down to any. He had a genuine talent for drawing and wished to make his career as that, but his father thought it a waste of time and took away the drawing materials. In February 1938 he joined the B.A.F., did well, achieved promotion and became a gunner. He enjoyed life in the B.A.F. and had great hopes of making his career in the service. He was posted to the Middle East and continued to do well until 1942 when his plane was involved in a crash for which he was held partly responsible. He was demoted and



Case 41. Male. Admitted 16.4. 47. Age 25.

AETIOLOGY AND PSYCHOPATHOLOGY.

1). Family History. There was no history of mental disorder or alcoholism in the family. His father was a Chief Petty Officer in the Navy, a rigid disciplinarian, who nagged and shouted at his children, though he never used force. The patient took his father's attitude very much to heart, but the others "let father get on with it". The mother admitted that the patient was her favourite son, and that she took a very protective attitude towards him. The patient was the fifth of nine children; none of the others were abnormal.

2). Early History and Development. He was a normally mischievous small boy, but always reacted strongly against his father's discipline and criticism, often weeping bitterly about it. At school he got on well with other boys and reached the top standard. Between 1936 and February 1940 he tried various jobs without settling down to any. He had a genuine talent for drawing and wished to base his career on this, but his father thought it a waste of time and took away his drawing materials. In February 1940 he joined the R.A.F., did well, achieved promotion and became an Air-gunner. He enjoyed life in the R.A.F. and had great hopes of making his career in the service. He was posted to the Middle East and continued to do well until 1942 when his plane was involved in a crash for which he was held partly responsible. He was demoted and

sent home in disgrace. A short while later he was dismissed from the service for disobedience to orders. His father was furious and drove the boy frantic with sarcastic jibes. He became progressively more abnormal and first entered a mental Hospital in October 1942.

3). Temperament. Apart from his sensitiveness to criticism he appears to have been a healthy youngster, sociable, lively and cheerful. He was a good mixer and fond of company.

4). Sexual Life. He was fond of girls and got on well with them. Before he left for Egypt he became engaged. His girl wrote him many affectionate letters and intended to marry him on his first leave home. When he arrived home under a cloud, she threw him over and said she was going to marry someone else.

5). Summary of Causative Factors. There were no known hereditary or constitutional factors in this case, but the developmental situation was obviously fraught with dangerous possibilities. This boy's case lent itself particularly well to orthodox psychopathological interpretation. The favourite son of the mother was the only member of the family to fear the father, a state of affairs easy to explain as due to an Oedipus situation. He later showed a twofold reaction to this basic pathology in developing a harsh and tyrannical superego together with compensatory narcissistic trends. His curious change from the desire to make drawing his career to the feeling that his future lay in the R.A.F. seemed to indicate fantasy motives underlying the latter

urge, especially as he showed genuine artistic talent. The motive of flight from an intolerable situation was obvious. The social approval of aggression in combat probably relieved tensions due to the suppressed desire to rebel against the over-strict super-ego, as this latter situation is so often at the root of aggressive behaviour. He almost certainly entertained fantasies of strutting about as a be-medalled hero (see below). The effect of disgrace, his father's criticism and being jilted must not be underestimated as traumatic precipitating factors, but the collapse of his whole system of protective fantasies was probably quite as important.

CLINICAL MANIFESTATIONS. Between his return home in 1942, and his admission to Barming Heath Hospital as a voluntary patient in November of the same year, he was inactive, irritable with his younger brothers and sisters and spent most of his time locked in his own room. On admission he was dull, detached and uncommunicative, but often grinned in a fatuous way for little reason. He showed considerable anxiety, being tense, tremulous and worried about becoming insane. He was in hospital for four months; during that time his anxiety symptoms improved, but his thinning of affect became more pronounced, and he became more detached and off-hand. On more than one occasion he attempted to steal from local shops; inside the hospital he successfully snatched cake from the bakehouse. He became an overt homosexual, refused to work unless paid at wage-rates in force out-

side hospital, and was rude to female members of the staff when he met them in the grounds. He could not be allowed parole, so he left hospital against advice. He was regarded as unsuitable for further voluntary treatment.

Between March 1943 and April 1947 he drifted from one unskilled job to another, until he was arrested for wearing war decorations improperly. The medals in question were the Africa Star and Italy Star, which he claimed the right to wear. He was in prison on remand when he was certified.

His condition had seriously deteriorated. He showed severe affective failure and great incongruity of emotional reactions. He said that for several years he had been convinced that there was something wrong with his face, that a large piece between the cheek and nose on each side was missing. He said he had often heard strangers making disparaging remarks about his appearance, and also about his character. He therefore found it necessary to avoid social contacts, especially as he was convinced other people had some sinister influence on him. The persistence of his homosexual and pilfering propensities was soon apparent. There was no essential change in his condition before electro-narcosis was started on 5.4.48.

DIAGNOSIS. Important organic factors were excluded by clinical and serological examinations. The diagnosis was not seriously in doubt when treatment was administered. His inactivity, mannerisms, and preoccupation with bizarre ideas of bodily change suggested a predominantly



hebephrenic sub-type. The interesting feature of his case was the presence of signs suggestive of a psychopathic personality of the predominantly passive and inadequate type. These were clearly present when he first came under psychiatric observation. There was no mention of anything significant in his early history. In view of his father's attitude, any overt antisocial acts would not merely have come to light, but would have provided material for repeated adverse comment. The most probable conclusion is that the psychopathic traits were present in early life, but were successfully controlled as long as the super-ego received external support from the father in a relationship where his authority could be accepted.

TREATMENT. He was given six treatments by electro-narcosis, three times a week, starting on 5.4.48. The electrodes were placed frontally and the average coma-dose was 125 mA. He was given atropin and sodium amytal pre-medication. After his sixth treatment he complained of severe pain in the neck. A radiogram was taken and no bony injury was present, so the condition was diagnosed as a muscular injury. He continued to complain of pain for longer than was reasonable having regard to the nature of the injury. Close questioning revealed that he had some memory of the initial shock and was determined to avoid further treatment. As the thiopentone technique had not then been developed, and further treatment without protective techniques was clearly

unjustifiable, treatment was abandoned.

RESULT. He showed no mental change whatsoever. His delusions could clearly be explained as the only possible development of his R.A.F. hero fantasy, namely as an injured airman unable to take his place once more in society. They were quite untouched by treatment.

DURATION. The history obtained from the patient and his relatives indicated clearly that his illness was continuous from October 1942. The duration was therefore five years and six months when electro-narcosis was started.

31. Temperament. From an early age he was quiet, reserved, shy and sensitive. He was extremely honest and conscientious and made up for his lack of intellectual brilliance by hard work. He was fond of music, played the piano quite well, and for a number of years was a keen member of the choir of the local church. Light-hearted activities did not come easily to him, nor he

CASE 42. Male. Admitted 17/1/45. Age 30.

AETIOLOGY AND PSYCHOPATHOLOGY.

1). Family History. The patient's father was a civil servant; both he and his wife were most sensible and helpful in all their dealings with the hospital. The home was a good one, and there were two younger children both of whom were normal. The paternal grandmother and a maternal uncle and aunt were epileptics.

2). Early History and Development. His infancy and early childhood were normal. He was not a quick learner at school, but eventually reached the top standard. He failed to get a scholarship to a secondary school, so took a commercial training. When 15 he got work in a stockbroker's office, but soon afterwards the firm failed. He therefore took a further course of training and then got a job in a publisher's office, which he held until he was called up in 1940. His employer spoke highly of his work and character. In the army he appeared to get on quite well during the training period, but quite soon after being posted to a search-light unit in the Autumn of 1940 he broke down for the first time.

3). Temperament. From an early age he was quiet, reserved, shy and seclusive. He was extremely honest and conscientious and made up for his lack of intellectual brilliance by hard work. He was fond of music, played the piano quite well, and for a number of years was a keen member of the choir of the local church. Lighthearted activities did not come easily to him, but he

he was a painstaking reader of serious books.

4). Sexual Life. He showed little interest in girls and never had a girl friend, but was not shy or awkward in feminine society.

5). Summary of Causative Factors. There may have been an element of hereditary predisposition. He certainly showed schizoid traits from an early age, and his family were very doubtful whether he would make the grade in the army. As the patient was anxious to serve, no efforts were made to stop his call-up, and at the time he first became ill his unit was actively engaged in the Battle of Britain and the blitz.

#### CLINICAL MANIFESTATIONS.

From the summer of 1939 onwards he was noticed to be increasingly seclusive. Although he continued at work, he would not go out even with old friends, and spent his spare time sitting about doing nothing, or reading in a desultory way. In October 1940 he was admitted to a military mental hospital, and in December 1940 was discharged from the army. Until his first admission to Barming Heath Hospital on 12/3/41, he sat about at home doing nothing. He was abnormally quiet, and obviously disliked meeting people. Finally it became clear that he was hallucinated and his personal habits deteriorated.

In hospital he was dull and indifferent to his environment. He required supervision over his toilet and diet. Affective failure was profound and he frequently grinned and grimaced to himself for no



apparent reason. He was preoccupied with hallucinatory voices, which talked to him about sex. His thought content was nebulous and he said that his mind could be read and controlled by others. He made no social effort at all, and was incapable of useful work. His condition showed little alteration in the first six months after admission, except that he learned to take his food and attend to his toilet without constant supervision. On 2/10/41 he was discharged from hospital on the application of his father.

He was able to be cared for at home for over 2 years, but during that time was incapable of useful work and required general supervision to prevent self-neglect. He was given a prolonged course of E.C.T. as an out-patient at another hospital, but without benefit. He was again admitted to Barming Heath Hospital on 17/1/45, as his personal habits were deteriorating to a point which made care at home impossible.

On examination, he was profoundly anergic and apathetic. He spoke little, but when he did was incoherent and neologistic. He was very manneristic and deeply preoccupied with hallucinatory experience. He again required much supervision with his toilet and feeding, and was asocial and unemployable. In the 3 years which followed his admission he changed little, though occasional episodes of mild impulsiveness occurred. On one occasion he elucidated his thought content sufficiently to indicate that he heard two lots of voices, one of which was trying to reduce him

to the level of a machine, while the second was simply abusive. He said that he felt he must study to "Get on to the level of superior people" in order to escape from the malign influence of the first lot of voices.

DIAGNOSIS. Physical and serological investigations revealed nothing significant. In view of the family history of epilepsy an electro-encephalographic examination was felt to be desirable before giving electro-narcosis, but at the relevant time was almost impossible to obtain. As he had had a long course of E.C.T. without coming to any harm, it was decided to dispense with the electro-encephalogram.

The diagnosis was established long before electro-narcosis was contemplated. At no time had he shown any characteristic features of depression. His anergic state, preoccupation with hallucinations, mannerisms and general deterioration indicated the hebephrenic type of schizophrenia.

#### TREATMENT.

He was given a course of 12 treatments by electro-narcosis, three times weekly, starting on 7/4/48. He received atropin and sodium amytal premedication. The electrodes were placed frontally and the average coma-dose was 135 mA. No difficulties were encountered.

#### RESULT.

##### DURATION

He showed no change for better or worse as a result of electro-narcosis.

5/8/43, Age 22  
DURATION OF ILLNESS.

He had been ill for 7 years and 6 months when electro-narcosis was started.

21. Early History and Development.

was born, and was an average child, and then was educated at the local school, and then at the University of London, where he was working as a student.

22. Temperament. The patient's mother was a simple,

and lively girl, whose education was not very high, but she was a very intelligent and very capable woman, and was very kind and sympathetic towards her children.

23. Family History. The patient's father was a simple,

and lively man, who was a very capable and intelligent man, and was very kind and sympathetic towards his children.

24. Summary of Family History. There was probably

a hereditary constitutional predisposition. Shortly before the patient's father died he was very ill, and was very kind and sympathetic towards his children.

25. Physical Examination.

In January 1943 the patient was very ill, and was very kind and sympathetic towards his children.

CASE 46. Female. Admitted 5/8/43. Age 22.

AETIOLOGY AND PSYCHOPATHOLOGY.

1). Family History. The patient's paternal grandmother died in a mental hospital after being a patient for 33 years. There was no other instance of nervous or mental disorder.

2). Early History and Development. Birth and infancy were normal. She was an average scholar, and then had various semi-skilled jobs in factories. Before her breakdown she was working on armaments.

3). Temperament. The patient's mother was a simple, semi-literate soul, whose information was not very enlightening. The patient appeared to have been rather solitary and unenterprising from an early age.

4). Sexual Life. She married in 1941, but lived little with her husband, as he was posted to the Middle East shortly afterwards, and did not get home until after her breakdown. She had no children.

5). Summary of Causative Factors. There was probably a hereditary constitutional predisposition. Shortly before she became ill she lost her father in a motor accident, and her mother was seriously ill for several months. The patient was also very distressed at the absence of her husband abroad.

CLINICAL MANIFESTATIONS.

In February 1943 she became listless, strange in manner and erratic in conduct. As matters got no better, her husband was sent for and compassionate



posting to this country was granted. He became ill on the way home, however, and when the news of his delayed return was conveyed to the patient, she jumped out of a top storey window. She did not injure herself, but was admitted to Barming Heath Hospital on 5/8/43.

On examination she was mildly restless and impulsive. She was indifferent to her environment and showed severe thinning of affect. She replied to questions with irrelevant mono-syllables, was quite asocial and could do no useful work.

Four months later a cycle of alternation between excitement and resistive stupor was clearly discernible. She was hallucinated for hearing, and often smashed windows and crockery. In February 1944, when the ward fire was being made up, the patient succeeded in pushing her head into the grate and burned off a lot of hair. In March 1944 she was first noticed to bang her head impulsively against the wall. This tendency to self-injury soon became a serious nursing problem. As no sign of its abatement was apparent in May 1944, she was given a course of 9 electrically induced convulsions, without benefit. In December 1944 leucotomy was advised, and consent was obtained from her husband on 31/1/45. The operation was carried out on 17/2/45.

The neuro-surgeon noted that all layers of the scalp and epicranium were bound together in a solid vascular mass. The pericranium was thickened and the bone rough as a result of traumatic periostitis. The high vault of the skull rendered the usual markings inaccurate, so the site of the trephine

was raised 1.5 cm to compensate. This proved accurate in relation to the sutures on the right; on the left there were no sutures. On the left side the Crumie and low American operation was performed; on the right it was possible to do the Crumie and full American operation.

After leucotomy she remained inert, self-absorbed and manneristic. Her tendency to bang her head grew steadily less, and a year after the operation the occurrence was rare. This improvement was maintained until April 1948, though in other respects she presented the picture of a deteriorated schizophrenic. She then resumed her old practice, so it was decided to try electro-narcosis in the hope of mitigation. Before her first treatment there was considerable uncertainty as to whether she would require a large dose of electricity, owing to the phenomenal thickness of her skull, or whether she would require a low one owing to the presence of trephine openings and known cerebral damage.

A further attempt at treatment was made. By raising the DIAGNOSIS.

This was not in doubt when electro-narcosis was begun. The picture was typical of katatonic schizophrenia. Physical and serological investigations revealed nothing significant.

#### TREATMENT.

Electro-narcosis was started on 20/4/48. She received atropin and sodium amytal premedication. The electrodes

were placed frontally. A dose of 180 mA was used in the first stage. In the second stage the current level was reduced to 70 mA in 15 seconds. Up to this point the narcosis proceeded as usual, and breathing was established without difficulty. When the current was subsequently raised to 90 mA, the patient's pulse became rapid, and at 95 became irregular in short bursts, during which the rate was too great to count accurately. Reduction of the current level to 90 mA or below restored the rhythm to normal, and reduced the rate to 130 per minute. With some difficulty the narcosis was carried to its conclusion after 7 minutes. On the next two occasions, a first-stage dose of 165 mA was used, but again it proved impossible to exceed 95mA, for the same reasons. On the third occasion the narcosis became light with a current level sufficient to produce dangerous acceleration and irregularity of the pulse. As the patient had stopped banging her head, electro-narcosis was suspended.

A fortnight later her propensity reasserted itself. A further attempt at treatment was made. By raising the current level with extreme slowness a current level of 100 mA was reached on 11/5/48. This was sufficient to produce adequate narcosis, without raising the pulse rate above 140 per minute. On 13/5/48 it was possible to achieve 105 mA, and on 15/5/48 a dose of 115 mA was successfully accomplished. The head banging had again stopped, so it was decided to try and keep it in control with a weekly maintenance dose. A further treatment was administered on 21/5/48, but at the end

of 6 minutes, with the current level at 105 mA, the patient had an epileptiform seizure. According to the literature published at that time, this was not to be expected below 140 mA. It seemed clear that the patient showed an abnormal sensitivity to the passage of the current, in spite of being a well-built young woman who weighed 10 stone. It was felt that at best only slight benefit could be obtained by persistence, while the risk of catastrophe was considerable. Electro-narcosis was therefore discontinued.

#### RESULT.

A fortnight after her final treatment, the patient resumed her career of self-injury.

#### COMMENT.

I have been privately informed that there have been two fatalities following electro-narcosis in this country. The circumstances in which this information was given to me preclude me from mentioning names and places, but I have no doubt that the accounts given to me were correct. So far as I am aware, neither of these fatalities has been the subject of a written communication. One of the patients was a young woman who had previously had a very long course of metrazol convulsions. Six months later she had a number of spontaneous epileptiform seizures. After an interval she had a leucotomy, and after another interval was treated by electro-narcosis. She died suddenly from central heart failure after her



fourth treatment. The observation of abnormal sensitivity to electricity after leucotomy in my case was therefore very interesting.

#### DURATION OF ILLNESS.

She had been ill for 5 years and 4 months when electro-narcosis was begun.

2). Early History and Development. She was a beautiful baby, much admired by everyone, and made normal progress. After her father's death, her mother and aunt ran a boarding house for "nice people". This kept them fully occupied and they had little time for maintaining social contacts, and the children were rather left to their own devices. The patient was an average scholar and left school from the top standard when fifteen. For the next ten years she tackled various jobs fairly well, but never settled on any particular line, so never undertook any definite training. She did clerical and domestic work, and for a time was an untrained nurse in a private nursing home. During the war, although married, she was directed into factory work near her home. This she enjoyed and did well; in particular she was said to get on well with her workmates. She only left when she

Case 47. Female. Admitted 16.3.48. Age 35.

AETIOLOGY AND PSYCHOPATHOLOGY.

1). Family history. No family history of any mental or nervous disorder was disclosed. The patient's father was killed in an accident at work when the patient was nine years old. Her mother impressed both the medical staff and the psychiatric social worker as an unreliable witness. She gave the impression of refusing to admit the gravity of her daughter's illness, and of presenting information in a form which she hoped would support her viewpoint. The only sibling was a twin brother quite unlike the patient temperamentally.

2). Early History and Development. She was a beautiful baby, much admired by everyone, and made normal progress. After her father's death, her mother and aunt ran a boarding house for "nice people". This kept them fully occupied and they had little time for maintaining social contacts, and the children were rather left to their own devices. The patient was an average scholar and left school from the top standard when fifteen. For the next ten years she tackled various jobs fairly well, but never settled on any particular line, so never undertook any definite training. She did clerical and domestic work, and for a time was an untrained nurse in a private nursing home. During the war, although married, she was directed into factory work near her home. This she enjoyed and did well; in particular she was said to get on well with her workmates. She only left when she

became pregnant.

3). Temperament. The patient's mother could see no fault in her daughter, so it was difficult to arrive at a realistic assessment of her pre-psychotic personality. She never made friends with her neighbours after her marriage, as she thought them cruel and very critical of one another. She was houseproud and domesticated, fond of singing and a good needlewoman. She was said to have got on quite well with other people before she married.

4). Sexual Life. She showed little interest in men before marrying at the age of twenty-five. She was very jealous and possessive in her attitude to her husband. She had one daughter, to whom she was morbidly devoted, spending all her time sewing for the child.

5). Summary of Causative Factors. The mother was a queer woman, closely resembling the patient physically. Her influence on the patient was undoubtedly unhealthy, although exercised in the patient's early years, rather than by heredity. After being brought up by a woman with a slender hold on reality, a lonely adolescence with few social opportunities was certainly unfavourable. The precipitating factor of her illness was a fright she received when her child was nearly run over.

CLINICAL MANIFESTATIONS. The patient's mother suggested that there had been an indefinable character change in her since the birth of her baby. Symptoms sufficiently prominent for the mother to be quite unable to conceal them had been present since eighteen months

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before her admission to hospital, at which time she experienced the fright mentioned above. From that time onward, she went out less and less, and spent more than ever cleaning her house. She even used to work at it far into the night. Shortly afterwards she was heard to say that she was the Virgin Mary, but no notice was taken of this remark. She became very irritable, nagged her husband constantly and often flew into rages. She alternately spoiled her child grossly and shouted at her angrily and on several occasions persisted in singing loudly when she knew her neighbours were trying to sleep. Finally conditions became impossible and she was admitted to hospital under certificate.

She was then aloof, abstracted and indifferent to her environment. She had frequent outbursts of rage and jealousy which showed a modicum of emotional power, but otherwise she displayed serious affective flattening. She was extremely odd in manner and hid her face in her hands the moment a man came into the ward. She said she was the Virgin Mary, and spent her time in rather worried-looking ecstasies, listening to spirit voices. She claimed that she was continually influenced by the power of God, which constantly controlled all her movements. She became increasingly hostile and suspicious towards the staff and various other people whose existence was only hinted at, who were supposed to have brought about her incarceration by foul means. No essential change occurred before Electro-narcosis was started.



DIAGNOSIS. Physical and serological examinations revealed nothing significant. The diagnosis of schizophrenia was not seriously in doubt. There was no elation, acceleration, emotional warmth or distractibility to suggest mania. The mannerisms, affective failure and disintegration of the personality indicated classification as a paranoid schizophrenic rather than a paranoid state per se.

TREATMENT. She was given twentyseven treatments by electro-narcosis, three times weekly, starting on June 15th, 1948. She was given atropin and thiopentone premedication. The electrodes were placed frontally and the average coma dose was 135mA. No difficulties were encountered.

RESULT. One month after the start of treatment she showed considerable improvement. She was less manneristic and, in particular, gave up her habit of hiding her face in the presence of men. Her religious delusions cleared up and her hallucinations became less vivid, but she blamed her husband for all her misfortunes. She then began to lose ground although treatment was continued, and at the end of her course was in the same state as at the beginning. Five months after the end of treatment, her condition was still virtually unchanged.

DURATION OF ILLNESS. As her mother admitted that definite signs of abnormality were present for 18 months before admission to hospital, this figure can be accepted as the lowest estimate. The duration before electro-narcosis was started was taken, therefore, as 1 year and 9 months.

Case 54. Male. Admitted 15.3.48. Age 31.

AETIOLOGY AND PSYCHOPATHOLOGY.

- 1). Family History. There was no family history of nervous or mental disorder. The father, however, was a harsh man who was very hard on the children. When home from school he gave them additional work and they seldom got a chance to go out and play. The mother was a decent and fairly sensible woman. She left her husband when the patient was twelve. The patient was the only boy in the family; there were three elder sisters all normal and married.
- 2). Early History and Development. His early childhood was uneventful. He was rather below average at school, but got on with other boys and was not timid. He was very keen on scouting and was encouraged by his mother to bring friends home. He left school at fourteen and became a clerk. He had four jobs before joining the R.A.F. as a clerk when twenty-two years old. He did well at work and got on well with his colleagues, but after a time seemed to become restless and want a change. He was six and a half years in the R.A.F., four of them overseas.
- 3). Temperament. He was always rather spoiled by his mother and sisters. Though capable of making easy and pleasant superficial contacts, he was essentially reserved and sensitive. He did not make new intimates easily. Of a circle of eight close friends with whom he went about before the war, only the patient and one other

survived.

4). Sexual Life. He got on quite pleasantly and easily with girls but never showed any sign of a close attachment.

5). Summary of Causative Factors. The broken home, and the combination of a harsh father and indulgent mother were important developmental factors. He does not seem to have had a typically schizoid personality, but schizoid traits were present from an early age. The loneliness due to his friends being killed added to the difficulty of readjusting to civilian life.

CLINICAL MANIFESTATIONS. In February 1946, at the time of his demobilisation, he was strange in manner, restless and unable to settle down. He got a clerical job and did well at it, but said there was no longer a niche for him, and that nobody wanted to have anything to do with him. At home he became bored and indifferent, and said people outside were talking about him in a disparaging way. He seemed quite incredulous that his mother had not heard any such gossip. He said his ability was being criticised and on several occasions was very angry about it. Once or twice he smashed crockery but never attacked his mother or anyone else. Conditions slowly got worse until one night he stayed awake all night in a state of terror, saying someone was coming to shoot him.

After admission to Barming Heath Hospital on 15.3.48, he was suspicious and somewhat resentful. He complained that deliberate attempts were made to torment

him by rumours and scandals. He said that he could actually hear the voices of those who spread these tales about him. Sometimes he was accused of sexual vice, at others of politically undesirable activities. Occasionally the voices just shouted abuse and personal remarks. He was indifferent to his environment, showed severe affective thinning, and a stiff and peculiar manner. At times he grinned to himself in an inane way. He made no social contacts at all, and refused to work, or co-operate in any way with hospital routine. He showed no spontaneous improvement before electro-narcosis was started.

DIAGNOSIS. Important physical factors were excluded by clinical and serological investigations. He was regarded as a paranoid schizophrenic rather than a paraphrenic owing to thinning of affect mannerisms being prominent clinical features.

TREATMENT. He was given forty-one electro-narcosis treatments, three times weekly, starting on 14.5.48. He received sodium amytal and atropin premedication only before his first eighteen treatments, but after that had thiopentone instead of sodium amytal. The electrodes were placed frontally and the average coma-dose was 150 mA. No difficulties were encountered.

RESULT. At the end of his course of treatment he showed greater interest in his environment and improved affective power. He was much more sociable, was



co-operative in hospital routine, and worked usefully. Within a fortnight, however, retrogression was apparent, and two months after treatment all trace of improvement had vanished. On 6.12.48 he was transferred to another hospital.

DURATION OF ILLNESS. He had been ill for two years and three months when electro-narcosis was started.

CASE 57. Male. Admitted 4.10.47. Age 32.

AETIOLOGY AND PSYCHOPATHOLOGY.

1) Family History. His parents separated when he was twelve years old. Hints were dropped that his father drank, but as the mother was quite unreliable, this may have been untrue. The mother was unstable and histrionic, taking up one pursuit after another with indifferent success. For a time she kept a Guest-house; at the time of the patient's admission to Barming Heath, she had just bought a grocery stores in a small isolated village in the depths of rural Kent. She was already wishing herself out of it. There was no history of mental or nervous disorder. The patient had two older brothers, both stable and intelligent.

2) Early History and Development. He was a normal, healthy child who did quite well at school. When his parents separated, he was boarded out with various friends. His brother was emphatic that they all had to "fend for themselves" from that time on. He left school at fourteen, and from then until he was twenty, he worked casually at jobs that could only be regarded as semi-skilled. After losing a job as a Pullman car attendant, he helped his mother at her guest house. At her instigation he then joined the Regular Army as a gunner. He was stationed at Singapore, and in due course was taken prisoner there. The history of his illness begins soon after that date.

3) Temperament. From childhood he was a solitary individual. He liked going off by himself on expeditions to historical monuments. He had a taste for reading serious books and was keenly interested in politics as he grew older. He used to get very worked up about anything that seemed to him to be unjust, and for a very long time was an admirer of Hitler. In personal habits he was very fastidious as a rule, but, according to his brother, drank too much, though never getting really drunk. Although brought up a Catholic, he showed no special interest in religion.

4) Sexual Life. He was always shy and awkward in the company of girls, and showed no disposition to marry. When mentally ill he was said to talk a lot about a girl called "Dorothy" but his brothers thought she was simply an ideal dream-girl.

5) Summary of Causative Factors. He was a boy who showed schizoid traits at an early age. His mother's influence can hardly have been favourable, and matters were presumably aggravated by domestic friction before the parents separated. After that his schizoid tendencies were given full scope by an unsuitable social environment during adolescence. The precipitating situation was provided when he became a prisoner of war.

CLINICAL MANIFESTATIONS. He was admitted to hospital during the summer of 1942. He was untidy in person, frequently wandered away from members of his

unit, and said that spies were trying to get information from him. He seems to have been mentally ill during the remainder of his captivity and was not considered fit enough to be used as a labourer on the notorious railway. When liberated he was given a course of E.C.T. in India, and later had more E.C.T. and twenty good insulin comas in this country. He showed no improvement; a short while afterwards he was said to be untidy, solitary, fatuous and perseverating. He had preoccupations about becoming a doctor, was hallucinated for hearing and claimed to be in touch with God. He required every care and attention.

He was admitted to Barming Heath Hospital directly from the military mental hospital. He was indifferent to his environment and almost incapable of effective response. He grinned and grimaced to himself in a fatuous way, and was preoccupied with auditory hallucinations. He claimed to be in special touch with God, was frequently impulsive, and required constant care and supervision to prevent self-neglect.

He was regarded as a paranoid schizophrenic on admission, but his symptoms became more suggestive of the katatonic type as time passed. Periods of excitement occurred, in which he was noisy, impulsive and prone to injure himself, usually by banging his head against furniture. Alternating with these were phases of resistive stupor, in which he displayed intense negativism. This cycle of events continued



Category 1. No 25.  
CASE 62. Female. Admitted 1/2/48. Age 27.  
until electro-narcosis was started.

DIAGNOSIS. Important physical factors were eliminated by clinical and serological tests. The diagnosis was not in doubt at the time of his admission to Barming Heath, but the sub-type was altered for the reasons given above.

TREATMENT. He was given twenty-nine treatments by electro-narcosis, three times weekly, starting on 14.5.48. He received sodium amytal and atropin premedication. The electrodes were placed frontally and the average coma-dose was 150 mA. No difficulties were encountered.

RESULT. At the end of his course he was not improved in any respect. About one month later he was reported as being less excitable and less impulsive. This change persisted until six months after treatment was finished, but was regarded as coincidental, and was not claimed as being due to electro-narcosis.

DURATION OF ILLNESS. This was five years and six months at the time elector-narcosis was begun.

CASE 62. Female. Admitted 13/5/48. Age 27.

AETIOLOGY AND PSYCHOPATHOLOGY.

1). Family History. The patient's mother suffered from recurrent attacks of psychotic depression. She was in a mental hospital for several months when the patient was 6 years old. She again became very depressed in 1940, but did not go to hospital. The patient had to nurse her although she was very depressed and refused to be left alone at all. The maternal grandmother had a mental illness late in life; a maternal uncle committed suicide and two other maternal uncles were addicted to alcohol. The father was a stable and intelligent man with a good job in an aircraft factory. There were also four boys in the family, all doing well. The main burden of looking after the mother fell to the patient, who broke down after three years of it. After her first illness the mother died of cancer in 1944. In 1946 the father married again; the patient and her step-mother got on quite well together.

2). Early History and Development. Birth and infancy were normal. As a child, the patient was said to be excitable and highly strung. She was average at school, made friends and was normally sociable. She then went into domestic service; she was a good worker and appeared contented in her jobs, the last of which was in a clerical household.

3). Temperament. Before going home to look after her mother she appeared a bright and cheerful girl. She

was excitable, but friendly and sociable. Her interests were domestic and she did not go out much, but was fond of sewing and reading magazines.

4). Sexual Life. She never showed any interest in boys.

5). Summary of Causative Factors. There was presumably a strong element of constitutional predisposition arising from her heredity. The precipitating factor was the strain of nursing her mother in conditions which no girl of her age should have been asked to face.

#### CLINICAL MANIFESTATIONS.

From the spring of 1942 onwards she became tired and listless. She showed signs of irritability with her mother and by March 1943 she was strange in manner and incoherent in her talk. She then said she had been injected with a doctor's urine as a result of which she was going to have a baby. Then she said that God had made her mother the Virgin Mary. She used to spend hours in the lavatory, saying that God used to talk to her there and give her commands. She was admitted to Barming Heath Hospital on 12/4/43.

She was abnormally quiet, self-absorbed and indifferent to her environment. She sat in strange attitudes, gazing fixedly into space, whispering almost inaudibly to herself. She showed severe flattening of affect and there was incongruity between her emotional reactions and the current of spoken thought. She was incoherent in speech and said that she could constantly hear the voice of God

giving her orders and guidance. She said that she was several months pregnant as a result of taking some medicine at a general hospital, although she had never had sexual intercourse. She believed that God had made her mother the Virgin Mary, and claimed that all her actions were controlled by influences from Heaven. She made no social efforts at all, and was incapable of occupation. During the ensuing months she made steady progress. She soon became co-operative towards measures of rehabilitation, and on 6/1/44 was able to leave hospital. She still showed flattening of affect, vagueness of thought content and a tendency to mannerisms, but her thought disorder and hallucinations had cleared up.

Soon after going home she relapsed to her former condition, and was incapable of any activity except knitting. She was very manneristic and held long conversations with imaginary people. At times she rushed impulsively about the house, but was not destructive. Further psychiatric help was not sought until 1948, when her personal habits became faulty. She was readmitted to Barming Heath Hospital on 13/5/48.

She then grinned and grimaced continually in a fatuous way and showed no interest in her environment. Her affective failure was profound, and she spent her time listening to hallucinatory voices. She still said that as the result of an injection at a general hospital in 1942 she had ever since "wanted sex" and had consequently been pregnant ever since. She had



sufficient knowledge of sexual physiology to know that this was impossible, but this made no difference to her belief. She believed her mind was constantly controlled by the doctor who gave her the injection. No improvement occurred up to the time when electro-narcosis was tried.

#### DIAGNOSIS.

This was not in doubt when she was given electro-narcosis. Physical and serological investigations revealed nothing significant. She showed no clouding of consciousness, nor was her emotional reaction depressive in character at any time. Her pre-occupation with hallucinations, mannerisms, mild impulsiveness and deterioration to a vegetative state were characteristic of the hebephrenic type of schizophrenia. Her rumination on the treatment at the general hospital was part and parcel of her bizarre thought content, rather than definitely paranoid.

#### TREATMENT.

She was given 17 treatments by electro-narcosis, three times weekly, starting on 15/6/48. For the first two treatments she received sodium amytal and atropin premedication. On subsequent occasions she was given atropin and thiopentone. The electrodes were placed frontally and the average coma dose was 135 mA. No difficulties were encountered.

RESULT.

After her course of electro-narcosis, she said that she thought the baby must have died inside her, and got so far as to recognise that she was "sexually unsatisfied", but in no other respect did she show any change. No improvement was claimed in her case.

DURATION OF ILLNESS.

Allowing that she made a social recovery from her first illness, she had been ill for rather over 4 years when electro-narcosis was begun.

30. Family History. His parents said he was a bright and active boy before he went into the Navy. Their account of his illness was undoubtedly coloured by the fact that they had to fight to get a pension for him. When he first came under psychiatric observation he was described as an immature personality.

31. Sexual Life. He never had any girl friends.

32. Summary of Significant Factors. The most reasonable

CASE 69. Male. Admitted 29.5.48. Age 23.

AETIOLOGY AND PSYCHOPATHOLOGY.

1). Family History. The father was a not very intelligent working man. The mother suffered from a high blood pressure and could not get about much, but was mentally stable. There were nine children in the family of whom the patient was the sixth. There was no history of mental or nervous disorder.

2). Early History and Development. The patient had a normal, happy childhood. He did well at school, and after leaving at fourteen, worked in a butcher's shop for three years. He then worked in a factory for six months, and when seventeen and a half volunteered for the Navy. He had been anxious to do this for two or three years, and made his first application when he was sixteen. He became a stoker and at first did well, but by July 1946 it became apparent that something was amiss. From that point on, however, his story became that of his illness.

3). Temperament. His parents said he was a bright and active boy before he went into the Navy. Their account of his illness was undoubtedly coloured by the fact that they had to fight to get a pension for him. When he first came under psychiatric observation he was described as an immature personality.

4). Sexual Life. He never had any girl friends.

5). Summary of Causative Factors. The most reasonable

estimate was that he was a simple and rather immature young man who could not meet the demands of life in the Navy.

CLINICAL MANIFESTATIONS. In July 1946, when home on leave, he was noticed to have changed. He was dirty and careless of his appearance. He spent his time sitting about the house, staring into vacancy. At meals he would not sit down, but ate his meals walking about. He frequently laughed foolishly to himself for no known reason. He returned to duty, however, and remained in the Navy until automatically released with his age group in April 1947. After that he did no work and was a nuisance at home. He continued to be dirty and careless, but unless extremely tactfully handled he flew into tempers and was very threatening in manner.

The patient's father felt that his condition should have been noticed much earlier and that the Navy should have done something about it. He pressed his claim for a pension; his Member of Parliament took the matter up, and a 100% disability pension was awarded. The Navy agreed to arrange treatment at their expense. He was admitted to a registered mental hospital, as a voluntary patient. Schizophrenia was diagnosed and insulin treatment was started in November 1947. It was difficult to get him into coma, and he was very restless and excitable during treatment. He showed no response, and indeed continued to deteriorate slowly. He stayed in the hospital until 15th May 1948. He was then allowed home



for the week-end. On his return to hospital he would not go in, hit his brother on the jaw, and ran off down the road. The parents were advised to get in touch with the relieving officer with a view to certification.

He was, accordingly, admitted to Barming Heath Hospital on 29.5.48. He was withdrawn from reality and showed profound affective failure. He had frequent outbursts of senseless laughter, and admitted that he constantly heard voices. He believed his mind was read and controlled by other people. He was socially quite inactive and was unable to be usefully employed. He showed no improvement before electro-narcosis was begun.

DIAGNOSIS. The clinical picture was quite characteristic of schizophrenia of the hebephrenic type. Clinical and serological investigations revealed nothing significant. In view of subsequent developments, it is worth noting that on clinical examination his heart was not enlarged, the sounds were pure and the arteries elastic.

TREATMENT. He was given thirteen treatments by electro-narcosis starting on 16.7.48. On the first three occasions he had atropin and sodium amytal premedication only. Subsequently he was given thiopentone. The electrodes were placed frontally and the average coma dose was 160 mA. During his last two treatments, however, he showed marked irregularity of cardiac action, with many extrasystoles. Treatment was stopped and a cardiologist's opinion obtained.

He found no clinical or electrographic abnormality

Category 2, No 27.  
but said the X-ray showed some very slight enlargement of the pulmonary artery without any cardiac hypertrophy. He felt very doubtful about the presence of any cardiac lesion, but thought it possible that there was a very minor degree of auricular septal defect, which would explain the signs shown under electro-narcosis. He did not feel there was any serious risk in continuing treatment but advised shortening treatment to about four and a half minutes instead of seven.

Unfortunately the patient's father ordered his discharge before treatment could be resumed, in spite of medical advice to the contrary.

RESULT. At the end of his course of treatment he was slightly brisker and more alert, but by the time he left hospital on 15.9.48, he had relapsed into the condition he was in before being given electro-narcosis.

DURATION OF ILLNESS. He had clearly been ill for two years at least when electro-narcosis was begun.

Category 4. No 27.

Case 77. Female. Admitted 5.27.48. Age 33.

AETIOLOGY AND PSYCHOPATHOLOGY.

- 1). Family History. The patient's father drank heavily and died while she was in her teens. Her mother was a healthy, hard-working woman who took to daily domestic work. She later remarried, but her family did not take to their step-father, although he treated them well. The patient had a brother and two sisters, all normal and healthy. The boy became an officer in the R.A.F., largely as a result of sheer hard work. There was no history of mental or nervous disorder.
- 2). Early History and Development. She was a delicate child and was frequently away from school. She was rather backward. After school she did domestic work fairly satisfactorily until she married.
- 3). Temperament. She was said to be lively, energetic and highly strung. She was, however easily upset by criticism, and did not make friends easily.
- 4). Sexual Life. Having shown little previous interest in boys or men, she married a labourer in 1934. He was apparently very dominated by his mother and spent much time with her while leaving his wife on her own. He had many spells of unemployment, during which the patient went out to work while her own mother cared for the children born in 1935 and 1936. The husband was in the Army from 1939 till 1945; he grew increasingly negligent and did not even tell his wife when he was demobilised. An unofficial separation was then arranged.

The husband took the elder child, but left the younger with the patient and agreed to pay her 25/- per week. Shortly afterwards he set up house with another woman.

5). Summary of Causative Factors. There was probably a hereditary constitutional predisposition in her case. Certain schizoid traits were present in her personality structure, and were no doubt aggravated by her early delicacy. Marital stress and the general difficulties of war time life were further precipitating factors. She lived in a particularly active part of "bomb-alley."

CLINICAL MANIFESTATIONS. In 1943 she had scarlet fever, and was never really well after that. She became lethargic, and neglected her house and children. She was supposed to have had some heart trouble, but subsequent investigation in Barming Heath revealed no lesion. During 1944 and 1945 she had two spells at a convalescent home without benefit. On the second occasion the matron thought she was queer and in need of treatment for her mental state. She began to stay indoors as she believed people were staring at her and talking about her. In July 1946 she accepted voluntary treatment at Barming Heath.

She was morbidly preoccupied and showed severe flattening of affect. She grinned and grimaced frequently in a fatuous way and showed great discrepancy between the current of spoken thought and her emotional reactions. Every time she went down the ward, she kept turning round and round; also, unless prevented, she used to sit on



every bed and wave her feet in the air. On several occasions she displayed mildly impulsive behaviour. She was regarded as a schizophrenic.

On 26.7.46. E.C.T. was started, but after four treatments she refused to have any more. On 19.8.46. she left hospital against advice. By then she was, if anything, more facile, manneristic and erratic in conduct than on admission.

In the interim before her next admission on 27.5.48, she continued to deteriorate slowly. Both she and her child were supported and cared for by her mother. When she was admitted, the development of her illness was clear. She was detached from her surroundings and barely capable of any emotional response at all. She continually grinned and pulled silly faces, and spent her time listening to imaginary voices. She believed her mind was controlled by psychic power, used by a group of people who were connected with her husband in some way. She complained of weakness of the limbs and various strange sensations which she said were due to these psychic influences. She was indifferent to her appearance and toilet and required constant supervision. From time to time she was mildly impulsive. She showed no significant change before electro-narcosis was begun.

DIAGNOSIS. Important physical factors were excluded by clinical and serological examination. By the time electro-narcosis was started there was no doubt about the diagnosis - hebephrenic schizophrenia. As a matter

form, depression was excluded on the grounds of absence of depressive emotional reaction or mental content..

TREATMENT. She was given twenty-five treatments by electro-narcosis three times weekly, starting on 14.8.48. She received atropin and thiopentone premedication throughout her course. For the first nineteen treatments the electrodes were placed frontally and the average coma-dose was 120 mA. For the remaining treatments the electrodes were placed frontally, but moved temporally during treatment. The average coma-dose was then 115 mA. During three of her final six treatments the pulse became weak and the respiration shallow when efforts were made to increase the dose above 115 mA. No other difficulties were encountered.

RESULT. She showed no change whatever.

DURATION OF ILLNESS. She had been ill for approximately five years when electro-narcosis was begun.

CASE 80. Male. Admitted 15.3.47. Age 28.

AETIOLOGY AND PSYCHOPATHOLOGY.

1). Family History. The patient was an Australian, without any relatives in this country. The Australian Red Cross made great efforts to secure information about him, but the history was undeniably scrappy. His father and mother were alive and well; his father was an insurance agent in South Australia, but at one time owned considerable property. A maternal aunt was treated in a mental hospital, probably after a confinement.

2). Early History and Development. His infancy was uneventful, at school he did fairly well; he left at seventeen in the usual form for that age. He was a grocer's assistant for six months but gave that up to become a professional jockey. After four years of that he was called up, but was discharged from the Australian Army in 1941, about a year later. He then went to sea for three years, came to this country and drifted from one menial hotel job to another until certified in March 1947.

3). Temperament. Little definite information could be secured. He was apparently a shiftless irresponsible individual, and was said to have contracted gonorrhoea at the age of fourteen. The picture was very suggestive of a psychopathic personality of the predominantly passive and inadequate type.

4). Sexual Life. Nothing was known, apart from the incident mentioned above.

5). Summary of Causative Factors. There was possibly

a hereditary constitutional element. His personality was very inadequate and probably psychopathic. There was no definite precipitating factor.

CLINICAL MANIFESTATIONS. He was admitted to Barming Heath Hospital under certificate as his behaviour at his lodgings in a neighbouring town was most peculiar. Under observation he showed himself aloof, detached and indifferent to his surroundings. He adopted strange attitudes and continually grinned and grimaced for no apparent reason. He showed profound affective failure, and was inconsequent and disconnected in speech. He said he was a prophet and claimed to be able to foresee the future for years ahead. He said that the universe was like a machine with a missing cog and that he was the only person who could supply the missing element and make it function once more. Just before admission he had had a vision of a dark woman who said "Thou art the One". Shortly after admission he began to complain that electricity was passed into his feet through the floor by enemies. He claimed that he could hear them discussing what to do to him next. His affective reaction was quite facile and shallow, with remarkably little resentment or hostility. He was quite unsociable, but worked occasionally in a desultory way in the ward, under supervision. He believed his mind was controlled from outside himself, by other people. He showed no change before electro-narcosis was begun.

DIAGNOSIS. Physical and serological examination re-



vealed nothing significant. His blood Wassermann reaction, in particular, was negative. The diagnosis was hardly in doubt when electro-narcosis was begun. The presence of mannerisms, the bizarre nature of his thought content, his emotional failure and a deterioration in personal habits led to him being classified as a paranoid schizophrenic, rather than a predominantly paranoid state. The strong probability of psychopathy was borne in mind also.

TREATMENT. He was given thirty treatments by electro-narcosis three times a week starting on 16.8.48. He received atropin and thiopentone pre-medication throughout. For the first twenty-one treatments the electrodes were placed frontally and the average coma-dose was 150 mA. For the remaining treatments, the electrodes were placed frontally at first, but were moved temporally during treatment. The average coma dose was 135 mA. He showed a tendency to restlessness during the whole course of treatment. If large doses of thiopentone were given, the establishment of respiration in the second stage was apt to be difficult. Largely by a process of trial and error, his course of treatment was carried through successfully without him retaining memory of the treatment at any time.

RESULT. At the end of his course of treatment he was still shallow and facile in affect, inconsequent in speech and erratic in conduct. It was difficult to elicit evidence of delusions or hallucinations until several weeks later, when their presence again became

obvious. He conversed with the voices and said he was controlled by the B.B.C. He showed no improvement as the result of treatment.

DURATION OF ILLNESS. It is difficult to believe that the condition he was in on admission had only been present for a few days. Nevertheless definite evidence to the contrary could not be obtained so the duration of his illness was reckoned from his admission, and computed at one year and five months when electro-narcosis was started.

Between the times, it appeared that conditions were hard for him as a child. He was an average school boy and then had a variety of labouring jobs. During the war he worked in the Army, and was in fighting. He learned to drive a truck, and after the war he came to England and had several jobs as lorry-driver and general labourer. He blamed circumstances for his change of employment, but it was doubtful if this was the whole truth.

Mr. Thompson. He gave the impression of being a simple fellow, with a generally disengaged attitude which prevented him from recognising his own limitations.

Mr. James Life. He said he had no interest in girls and had never had a special girl-friend.

Mr. Summary of Cognitive Factors. He appeared to be a man of inadequate personality who was failed to adjust successfully to even a humble way of living.

Category 4. No 29.

CASE 82. Male. Admitted 11/8/48. Age 27.

AETIOLOGY AND PSYCHOPATHOLOGY.

1). Family History. The patient particularly asked that his relatives should not be informed of his admission to hospital. An independent history could therefore not be obtained, but the patient himself denied any knowledge of familial mental or nervous disorder.

2). Early History and Development. He was one of a large Catholic family in Northern Ireland; reading between the lines, it appeared that conditions were hard for him as a child. He was an average scholar and then had a variety of labouring jobs. During the war he served in the Army, but saw no fighting. He learned to drive a truck, so after the war he came to England and had several jobs as lorry-driver and general labourer. He blamed circumstance for his changes of employment, but it was doubtful if this was the whole truth.

3). Temperament. He gave the impression of being a simple fellow, with a generally disgruntled attitude which prevented him from recognising his own limitations.

4). Sexual Life. He said he had no interest in girls and had never had a special girl-friend.

5). Summary of Causative Factors. He appeared to be a man of inadequate personality who had failed to adjust successfully to even a humble way of living.

## CLINICAL MANIFESTATIONS.

In February 1948 he began to feel tired and unable to take any interest in his work and recreation. In March he began to complain of pain in his chest, which he was convinced was due to tuberculosis. He consulted his doctor and was reassured, but refused to accept the verdict. His ideas became distinctly bizarre, and he talked about spitting up black fluid, which no-one else ever saw. In July 1948 he was thoroughly investigated at a general hospital and found fit. He still refused to accept the findings and was referred to a psychiatrist and then admitted to Barming Heath Hospital on 11/8/48.

On examination he was solitary and self-absorbed. He was quite willing to occupy himself with simple routine jobs, but made no effort to mix socially. He showed severe flattening of affect and occasionally grinned to himself in a fatuous way when there was no context for laughter. He complained of overpowering apathy and lethargy which he was powerless to shake off. He said he could hear his thoughts echoing inside his head, and complained of a strong sense of the unreality of his surroundings. He professed much anxiety about his physical state, but showed little evidence of real tension or emotion. He said he was sure that he had tuberculosis and described many weird sensations in his chest to confirm his point. He refused to accept reassurance to the contrary. He was not mentally retarded, but blocking of thought was observed quite frequently.



When not occupied, he spent his time gazing vacantly into space. Judging by his replies when roused he was ruminating on the curious bodily sensations already mentioned, though at times he admitted he was listening to the echo of his own thoughts. He showed no change before electro-narcosis was begun.

#### DIAGNOSIS.

Physical and serological investigations of great thoroughness revealed nothing significant. There was no clouding of consciousness and no defect of memory to suggest an organic origin for his symptoms. The possibility of an anxiety state was seriously considered, but he showed no real anxiety and was quite inaccessible to an aetiological approach. The delusion of bodily disease was compatible with a depressive illness, but his emotional reaction was not depressive. He was not retarded and showed no feelings of guilt or inadequacy. The flattening of affect, tendency to mannerisms and bizarre hypochondriacal thought content all suggested schizophrenia. In spite of his mildly paranoid outlook and tendency to blame others for his troubles, his predominant symptoms were felt to be hebephrenic.

TREATMENT. He was

#### TREATMENT.

He was given 10 treatments by electro-narcosis, three times weekly, starting on 25/8/48. He received atropin and thiopentone premedication. The electrodes were placed frontally and the average coma-dose was 170 mA. No difficulties were encountered.

#### RESULT.

At the end of 10 treatments he refused to have any more. He made it clear that he was convinced that the doctors were working on quite the wrong lines. He was not apprehensive of further treatment, and did not remember anything about the narcoses he had had. He showed no improvement, and 2 days later left hospital.

#### DURATION OF ILLNESS.

He had been ill for just over 6 months when electro-narcosis was begun.

CASE 84. Female. Admitted 28/8/43. Age 30.

AETIOLOGY AND PSYCHOPATHOLOGY.

1). Family History. A paternal uncle was addicted to alcohol, and a sister of the patient was mentally ill after accidentally overlaying her baby. There was no other family history of mental disorder.

2). Early history and Development. Birth and infancy were normal. She was an average scholar, and then worked in domestic service until her marriage.

3). Temperament. Few details could be obtained, as the only available informant was her husband, who did his best to pass on scraps of information received from her parents; they did not live in Kent. It appeared that she was rather a solitary girl, who seldom went out, and lived a sheltered life before marriage.

4). Sexual Life. She married in 1941, and had her first baby late in 1942. The child was said to have been difficult to manage during the process of weaning in the summer of 1943.

5). Summary of Causative Factors. There was presumably a hereditary constitutional element, and her pre-psychotic personality was almost certainly inadequate, and probably schizoid. At the time she broke down she was very distressed by the absence of her husband in the forces, and upset by the trouble with her baby. Her home was in a part of Kent which was noisy during the war, but in 1943 there was a comparative lull.

and was notably destructive even among her peers.

## CLINICAL MANIFESTATIONS.

After her husband had a spell of leave in June 1943, the patient became flustered by relative trifles, and felt that everything was too much for her. Her condition slowly deteriorated, but she succeeded in keeping the home going with some help from neighbours. When her husband came home again in August 1943, she broke down at once, and became stuporose. She was therefore admitted to Barming Heath Hospital on 28/8/43.

On examination she was mute, withdrawn from contact with her environment, and totally dependent on nursing care. She used to stare at the ceiling and mutter to herself, after the first few days, but even then she formed no intelligible words. From time to time she was impulsive and restless in an aimless way.

As time passed, a cycle of alternation between phases of resistive stupor, and excitement with impulsiveness became established. She made no spontaneous progress, and physical therapy was withheld as her husband would not consent to it. Finally he changed his mind, perhaps because he was contemplating divorce under the Matrimonial Causes Act. In 1948 he became quite importunate, although the prognosis was by then virtually hopeless and her physical condition not very robust. She was by then grossly deteriorated. She was dirty and degraded in habits, picked her skin frequently, and was notably destructive even among her peers.



## DIAGNOSIS.

On her admission she was regarded as suffering from a toxic-infective-exhaustive syndrome. When she failed to respond to treatment and began to show phasic alternation of excitement and resistiveness stupor, she was regarded as a katatonic schizophrenic. The diagnosis was not in doubt when treatment by electro-narcosis was begun.

## TREATMENT.

She was given 16 treatments by electro-narcosis, three times weekly, starting on 12/10/48. She received atropin and ~~sthiopentone~~ thiopentone premedication. The electrodes were placed frontally and moved temporally during the course of each treatment. The average coma-dose was 115 mA.

She was throughout a difficult patient to treat. She was abnormally sensitive to thiopentone. Twice she became pulseless and her respiration stopped before any current was applied. She fortunately responded quickly to ventilation of the lungs with oxygen. She tended to develop an extreme degree of stridor which obstructed respiration almost completely, at a very low current level. If she became short of oxygen, her pulse immediately became weak and irregular. The narcotic process was, however, under control the whole time, but careful observation and rapid adjustments were essential.

## RESULT.

Category 4. No 37.

RESULT.

Half way through her course she made her longest connected speech for months, saying that she did not want any more electricity played on her. She qualified the word electricity by several adjectives. Otherwise there was no response whatever after 16 treatments. The risk of going on appeared to be unjustifiable.

DURATION OF ILLNESS.

She had been ill for 5 years and 4 months when electro-narcosis was begun.

37. Temperament.

She was a self-contained child who had few friends. This trait became more marked as she grew older. She had an erratic temper.

38. Sexual Life.

She never showed any interest in boys.

39. Summary of Question Factors.

Constitutional predisposition was obviously the predominating factor in her case. There was no discoverable organic factor.

CLINICAL MANIFESTATIONS.

The merging of her epileptic pre-organized personality into a frank psychosis was almost imperceptible. From the age of twelve, however,

Category 4. No 31.

Case 88. Female. Admitted 7.9.48. Age 19.

AETIOLOGY AND PSYCHOPATHOLOGY.

1). Family History. Her Maternal grandfather had a spell in a mental hospital in 1937, and in 1945 committed suicide. A maternal aunt had been in a mental hospital for eighteen months when the patient was admitted to Barming Heath. Her mother was unstable and peculiar in manner. The father was a farm-labourer. The patient was an only child.

2). Early History and Development. Her infancy was normal; she walked and talked at the usual times. She attended elementary school and reached the top standard. After that she was in a situation as a resident domestic in a small town near her home. She gave satisfaction for fourteen months, then left of her own accord and thereafter lived at home, doing some domestic work there.

3). Temperament. She was a self-contained child who made few friends. This trait became more marked as she grew older. She had an erratic temper.

4). Sexual Life. She never showed any interest in boys.

5). Summary of Causative Factors. Constitutional predisposition was clearly the predominating factor in her case. There was no discoverable exagenic factor.

CLINICAL MANIFESTATIONS. The merging of her schizoid pre-psychotic personality into a frank psychosis was almost imperceptible. From the age of twelve, however,

she was noticed to have a habit of silly laughter and rubbing her hands together. A year or two later she had the appearance of listening to something and often looked in an intent way into the corners of the room. Slowly her capacity for work deteriorated and in December 1947, though capable of domestic work, she showed little inclination to help in the house. She often laughed and talked to herself. She was moody and inclined to explosive outbursts of temper.

In June 1948 her case was reported to the Mental Deficiency Authorities, who examined her and said there was no evidence of mental deficiency in childhood or schooldays. Her test results were above the level attained by certifiably feeble-minded persons. She was then referred for a psychiatric opinion and admitted to Barming Heath Hospital on 7.9.48.

She showed profound failure of affect and was pre-occupied with hallucinatory experiences. She said that fair and dark men talked to her continually, telling to do things, sometimes things that were bad. When she thought herself unobserved she used to bow and nod to the "voices". She also complained that wherever she went people gossiped about her in a malicious way, and made false accusations about her conduct. She smiled as she made this latter statement and often showed similar inappropriate affective responses. Occasionally she was mildly impulsive, but was never seriously destructive or aggressive.



DIAGNOSIS. Important physical factors were ruled out by clinical and serological investigations. Mentally deficiency having been ruled out by an expert, schizophrenia was the only alternative. The progression to a vegetative state with preoccupation with hallucinations, silly laughter and mild impulsiveness together made up a typical picture of the hebephrenic type.

TREATMENT. She was given ten treatments by electro-narcosis, three times weekly, starting on 4.11.48. She received atropin and thiopentone premedication. The electrodes were placed frontally and moved temporally during each treatment. The average coma-dose was 125 mA.

She was a pale, flabby creature and on four occasions her pulse became rapid and irregular. The response to a decreased dose was quite prompt so her condition never gave rise to serious anxiety.

RESULT. After her first three treatments she appeared slightly brighter and more interested in her environment. Subsequent treatments brought about no further improvement. The behaviour of her pulse indicated some risk of cardio-vascular shock, which would have been accepted cheerfully in a case with a reasonably hopeful prognosis. As the prospects in her case were very poor, treatment was abandoned. No improvement as a result of treatment was claimed.

DURATION OF ILLNESS. She had been ill for about seven years at the time electro-narcosis was given.

CASE 92. Male. Admitted 31.5.48. Age 25.

AETIOLOGY AND PSYCHOPATHOLOGY.

- 1) Family History. The father and paternal grandmother were addicted to alcohol. The mother was a stable and sensible working class woman. The patient had three sisters and one brother, all well and at work. There was no history of mental disorder.
- 2) Early History and Development. He was good at school and left from the top standard, but disliked it and did not get on well with other boys. After leaving he was for two years a van boy for Pickford's. At sixteen he became a railway porter, and remained at this work until he enlisted in 1942 at the age of nineteen. He had previously done his share of fire-watching and home-guard duties.
- 3) Temperament. He was shy and self-conscious with strangeness and made new friends only with difficulty. With people he knew, however, he was cheerful, sociable and ready to sing, play cards, or dance to the wireless. His hobbies were of a kind to keep him within the limits of a known circle, namely walking, gardening and reading novels.
- 4) Sexual Life. He had one or two girl friends, but no serious attachments, until just before his breakdown.
- 5) Summary of Causative Factors. There was presumably a hereditary constitutional element, as well as the schizoid personality traits already described. His experience as a prisoner of war for a year

apparently had no direct effect in producing his illness, as he resumed work satisfactorily in December 1945 after a spell at a Rehabilitation Centre. He complained of feeling "boxed-in" as a prisoner, however, and he certainly showed an introspective cast of mind and an avid interest in psychology afterwards. During the summer of 1945 he became more seriously attached to a girl than ever before and broke down soon after she gave him up.

CLINICAL MANIFESTATIONS. In April, 1946, when the first signs of strain between himself and his girl occurred, he began to complain of occipital pain, noises in the head and a sense of strain. He also felt nervous and worried. These symptoms became worse as his love affair deteriorated, and in August 1946 he began to have "black-outs", in which he used to sit quietly for about five minutes, looking far away, with his eyes flickering, taking no notice of anyone who might speak to him. He was taken on a holiday, hop-picking in Kent, but was no better afterwards. In October 1947, he was admitted to a neurosis centre where he was considered to be a schizophrenic of the hebephrenic type. He showed severe thinning of affect and grinned in an inane fashion. He had frequent night terrors, probably associated with hypnogagic hallucinations. On one or two occasions<sup>s</sup> he claimed to have visions of Christ, and frequently complained that the staff

stared at him and talked about him disparagingly.

He was given twenty-six insulin comas and three E.C.T. treatments, without improvement. An attempt was made to give him continuous narcosis, but he would not co-operate. Subsequently he refused to get up in the morning, or to take part in ward routine or occupational therapy. He was discharged in 1.4.47. unimproved. At home, he spent his time going for long walks. He slowly deteriorated and in May 1948 said that he frequently heard a voice telling him to kill someone. His relatives took fright and he was admitted to Barming Heath under certificate.

The predominant feature of his case was affective failure. He showed a tendency to grin in a fatuous way, and often talked to himself in answer to hallucinatory voices, but he showed no ideas of reference or passivity and claimed no communion with the Divine. He was devoid of any social urge and was incapable of useful work. He showed no change before electro-narcosis was started on November 5th, 1948.

DIAGNOSIS. Important physical factors were ruled out by physical and serological examinations. The diagnosis was not in doubt when electro-narcosis was given. He showed no depressive characteristics at all. The clinical picture after admission to Barming Heath was suggestive of the simple type



of schizophrenia, but the history from the neurosis centre showed that he was, in fact, of the hebephrenic sub-type.

TREATMENT. A report from the neurosis centre showed that he had sustained a compression fracture of the third dorsal vertebra during his third E.C.T. treatment. Protection other than thiopentone was considered advisable. He was given twelve treatments, three times a week, by electro-narcosis, starting on 3.11.48. Before his first three treatments he was given 0.5 gramme thiopentone and 15 mgms d-tubocurarine chloride (tubarin) intravenously. Before the next four treatments 15 mls of myanesin were given instead of the curare. He appeared to have less respiratory embarrassment with the myanesin. To confirm this impression he was given tubarin again before his eighth treatment. This put the matter beyond doubt; tubarin caused much greater respiratory depression. On the three following occasions he was given myanesin again. On the twelfth treatment day his pulse became very weak after the injection of thiopentone only. As all accessible veins except one very small one were sclerosed, and as he had not improved, this reaction to thiopentone led to the abandonment of treatment.

RESULT. He showed no change whatever for better or worse.

DURATION OF ILLNESS. His illness clearly started in April 1946 and had been going on for two years and seven months when electronarcosis was started.

1. Family History. The patient's mother is a widow, 55 years of age, and his father is a widower, 58 years of age. Both parents are healthy and have no other children. The patient's mother is a native-born American, and his father is a native-born American. The patient's mother is a native-born American, and his father is a native-born American. The patient's mother is a native-born American, and his father is a native-born American.

2. Early History and Development. The patient was born on April 15, 1944, at the home of his mother. He was born at term, weighing 7 pounds 15 ounces, and was born with a normal birth weight. He was born with a normal birth weight, and was born with a normal birth weight. He was born with a normal birth weight, and was born with a normal birth weight. He was born with a normal birth weight, and was born with a normal birth weight.

3. Development. The patient's development was normal until the age of 18 months, when he began to show signs of mental retardation. He was born with a normal birth weight, and was born with a normal birth weight. He was born with a normal birth weight, and was born with a normal birth weight. He was born with a normal birth weight, and was born with a normal birth weight. He was born with a normal birth weight, and was born with a normal birth weight.

4. Physical Findings. The patient is a white male, 5 feet 10 inches tall, weighing 150 pounds. He has a normal body build, and is in good health. He has a normal body build, and is in good health. He has a normal body build, and is in good health. He has a normal body build, and is in good health.

Case 93. Male. Admitted 10.10.47. Age 35.

AETIOLOGY AND PSYCHOPATHOLOGY.

1. Family History. The patient came of working class stock; his father was said to drink rather too much, but his mother was a sensible, stable woman. One brother and two sisters were alive and well; one brother died young from tuberculosis of the hip and one was in a mental hospital with a chronic schizophrenic illness.

2. Early History and Development. Nothing abnormal was noted during his infancy, but from quite an early age he displayed a tendency to violent temper. He did quite well at school, leaving at 14 from the top standard. Afterwards he attended night classes to learn shorthand and typing. He then worked as a window cleaner until his business collapsed during the war. Strangely enough, this happened in February 1940 while the windows were still intact.

3. Temperament. His violent tempers were followed by long periods of sulking, during which he would speak to nobody. He grew into a moody, quiet man, who did not make friends easily. He was studious and abstemious in habits, but was inclined to be suspicious and surly. Although his periods of quietness and sulking were described by his relatives as "depression", the whole picture of his personality revealed schizoid rather than cyclothymic qualities.

4. Sexual Life. He married when 25 years old. Until his first breakdown at the age of 28, his

marriage appeared happy and satisfactory. By agreement with his wife there were no children; proper contraceptive measures were taken.

5. Summary of Causative Factors. A constitutional element was clearly present, and he showed a schizoid personality from an early age. He was apparently capable of adjustment to a life of simple routine, but first broke down in 1940 when that routine was shattered. First he lost his job, then he had to adapt himself to life in the Fire Service. Finally, in May 1940 the war ceased to be "phoney" in South-East England. On the occasion of his second breakdown in 1947 there was no such clearcut precipitating situation. He complained that his work as a baker's roundsman was too much for him, but this may have been result, and not cause of his breakdown. Endogenous factors, therefore, appear to have been more important than external circumstance.

CLINICAL MANIFESTATIONS. When he lost his job in February 1940, he came home pale and shaken. He was in a panic about being called up, as well as worried about finance. He joined the fire service, but became moody and irritable. He lost all confidence in himself, dreaded meeting people and grew very silent. He said he could not talk or communicate with other people in any way, but managed to say that other people at work made fun of him and that strangers in the street stared as he passed. About this time he came under the influence of a very religious air-raid



warden, with unfortunate results. He became muddled in mind, and convinced that his troubles were all due to sin. Finally he said that his head was full of little devils, whose activities were driving him mad. He then had "brainstorms", in which he said that the best thing he could do was to kill his wife and himself, owing to the dreadful state of the world. He used to seize his wife by the throat occasionally and look rather fierce, but never did anything more drastic.

He was admitted to Barming Heath in May, 1940, and was regarded as suffering from a depressive attack, though his personality was recognised as clearly schizoid. During his stay, the opinion of the doctor in charge of his case veered away from regarding him as depressive, and in favour of classifying all features of his case as schizophrenic. His ideas of guilt and inadequacy cleared up in a few days, but he remained suspicious, seclusive and asocial for several weeks. During that time he retained ideas of being influenced from a distance by his religious friend, by hypnotic power. He was not considered a suitable case for metrozol (cardiazol) therapy; he co-operated well with measures taken for his rehabilitation and on 7.11.40 was able to leave hospital free from psychotic symptoms.

From then until July 1947 he was able to carry on in an unassuming and rather humdrum way as a baker's roundsman. The part of Kent in which he lived happened by chance to suffer relatively little material damage during the war, but was at times both noisy and

nerve-wracking. It is perhaps surprising that he did not break down, but it may be relevant to mention that ~~that~~ Barming Heath was neither quieter nor safer than the patient's home town. As already mentioned, there was no definite precipitating factor when he broke down for the second time, but he was said to have suggested that it would be easy for him to lose his job if he were unwell. There may have been some anxiety about the security of his future, compared with the complete economic safety of an able-bodied man, exempt from war service, during the war.

In July 1947 he began to feel that his work was too much for him. He was described as being depressed and in October he made threats of suicide as he said that life was not worth living. Shortly afterwards he jumped out of a first-floor window. He sustained some injury to his left shoulder, but there was no bony damage. He was again admitted to Barming Heath under certificate.

The clinical picture at first was very suggestive of an affective psychosis. He was slow in speech and thought, and complained of what he called a "general depression". There was an element of suspicion and secretiveness, and his account of himself was vague and his ideas ill-defined. At first he denied having attempted suicide, but later admitted it. There was no evidence of delusions or hallucinations, nor did he express any ideas of passivity. There was some memory loss for recent events, but otherwise no defect of the

sensorium. Xray of his shoulder showed that there was neither dislocation nor bony damage, but weakness of the left hand persisted. He was therefore examined by a neurological specialist, who said there was evidence of injury to the lower roots of the brachial plexus, due presumably to a heavy fall on the shoulder at the time of his suicidal attempt.

As time passed, the clinical picture became schizophrenic rather than depressive. Unfortunately, the patient's wife was strongly opposed to electrical treatment, which therefore could not be administered. His emotional state became one of thinning and failure, and he lost interest in his appearance and environment. He was able to carry on a fairly coherent conversation in an expressionless and personal way, with occasional gaps due to blocking of thought. There was, however, no retardation. He showed no abnormal mental content, either depressive or schizophrenic in type, and there was no evidence of hallucinations. His apathy and inertia deepened steadily, until in September 1948, his wife gave consent for electrical treatment. Electro-narcosis was felt to be the method of choice and was started on 12.11.48.

DIAGNOSIS. Nothing significant was found on clinical or serological examination. The main problem in diagnosis was the differentiation between schizophrenia and the depressive component of an affective psychosis. There were elements in the previous personality

suggestive of a cyclothymic disposition, but detailed investigation revealed a preponderance of schizoid trends. The recurrence of attacks with relative freedom from symptoms between them, and the nature of the attacks themselves also suggested a depressive psychosis. Nevertheless, in the first attack ideas of passivity persisted long after the affective condition had improved, and in the second attack there was affective failure, not depression. For these reasons he was regarded as a schizophrenic. He was thought to be of the simple type, as the predominant elements in his case were loss of energy and affective power.

TREATMENT. In view of the injury to his brachial plexus, it was thought advisable to provide protection additional to thiopentone. When electro-narcosis was started on 12.11.48, he was given 0.6 Em thio-pentone and 15 ccs. Myanesin intravenously before treatment. The electrodes were placed frontally at first and moved temporally during treatment. Muscular relaxation was very good and there was no depression of respiration. The coma-dose required was 160 MA. The same premedication and technique were used on subsequent occasions, but increasing difficulty was found in carrying out intravenous injections, as after each one the vein used became thrombosed. After the eighth treatment a severe inflammatory reaction occurred in the right arm. It healed completely in ten days without suppuration, but intravenous injection was quite impossible after-



wards. As rectal anaesthesia was not regarded as capable of producing adequate protection against injury, treatment was abandoned.

RESULT. There was no change whatever in his mental state.

DURATION OF ILLNESS. The second attack began in July 1947, so the duration when electro-narcosis was started was one year and four months.

Category 4. No 34.

CASE 95. Male. Admitted 1/9/48. Age 26.

AETIOLOGY AND PSYCHOPATHOLOGY.

1). Family History. The father was still working as a jobbing gardener at the age of 72. The mother was an anxious and highly strung woman. During the war she always slept in a deep excavation in the chalk, known locally as the tunnel. As the area was not very hard hit, the "tunnel-dwellers" were mostly regarded with a tolerance tinged with contempt, but as the lady in question was over 60, her attitude was felt to be allowable. One brother was a hyperanxious man, who was admitted to an observation ward during the war, but was able to go home and resume work. Another brother and sister were stable and doing well. A maternal uncle and a maternal aunt suffered from definite mental illnesses, but the family would give no details.

2). Early History and Development. Birth was difficult and instruments were used, but infancy was uneventful. He was rather backward at school, but there was no question of mental deficiency. After school he was an errand boy for a time, and then became a labourer in an aircraft factory until called up in 1943. He was in a very anxious state at the time of his call-up and was rapidly re-graded from A1 to C3; he was transferred to the R.A.M.C. and employed on menial sanitary duties. After the war he started on a course of agricultural training, but was dissatisfied with the wages, threw it up, quarrelled with

the officials of the Labour Exchange, and went back to unskilled labouring jobs.

3). Temperament. As a boy he was normally sociable, played football and other games with his friends, and was not a problem in any way. At the time of the Munich Crisis he showed intense fear, and during the war used to dive down the "tunnel" as soon as the sirens sounded. He was very clean, neat and orderly in his ways. He used to save money for things he wanted, like a wireless set and a bicycle, and had a horror of getting into debt.

4). Sexual Life. He never showed any interest in girls.

5). Summary of Causative Factors. There was presumably an element of constitutional predisposition of a hereditary nature. The influence of his mother probably favoured the growth of his hyperanxious attitude. His fear of air-raids and the stress of service life were the precipitating factors.

#### CLINICAL MANIFESTATIONS.

When he came out of the Army in May 1947, he was changed in character. He no longer went out with friends and could not settle down to work. He was very dissatisfied with the conditions offered in a variety of jobs, and used to shout in the streets about the unfair way he was treated. He left work frequently for trivial reasons, usually imagined slights. His only recreation was visiting the local Variety Theatre on his own. All the way home he used to shout loudly about the unfair rates of

pay earned by the artistes, compared with himself. Finally he shouted and swore at a bus conductor, whom he accused of charging double fare. He was taken to an observation ward, certified and admitted to Barming Heath Hospital on 1/9/48.

On examination, he was aloof, asocial and unwilling to occupy himself. His affect was thin and facile, and his speech so disconnected and circumlocutory that his meaning was hard to discern. He said he frequently heard voices, and expressed involved delusions about having been victimised for a long time. He showed blocking of thought, and believed his mind was tampered with. His former emotional outbursts and episodes of shouting were not noticed in hospital, but at times he was resistive and antagonistic towards the staff. He was never impulsive or aggressive and on one occasion when another patient attacked him he made no effort to defend himself. After a time he agreed to attend the occupational therapy department and allowed himself to be persuaded to play football. Otherwise he showed no change before electro-narcosis was tried.

#### DIAGNOSIS.

Physical and serological investigations revealed nothing significant. There was no clouding of consciousness or defect of memory to suggest an organic basis for his symptoms. His emotional reaction and mental content was not depressive at any time, nor did he ever show elation or acceleration.



His thin affect, incoherent speech and vague, involved thought content indicated schizophrenia rather than a predominantly paranoid psychosis. His persistent delusional attitude and anxiety phenomena were characteristic of paranoid schizophrenia.

#### TREATMENT.

He was given 21 treatments by electro-narcosis, three times weekly, starting on 1/12/48. He received atropin and thiopentone premedication. The electrodes were placed frontally and moved temporally during the course of each treatment. The average coma-dose was 120 mA. No difficulties were encountered.

#### RESULT.

He became slightly brighter and more co-operative after his course of electro-narcosis, but the change was insufficient for any improvement to be claimed.

#### DURATION OF ILLNESS.

He had been ill for 1 year and 6 months when electro-narcosis was started.

Category 4. No 35.

CASE 97. Male. Admitted 22/9/48. Age. 32.

AETIOLOGY AND PSYCHOPATHOLOGY.

1). Family History. He came of a working class family. His father was a strong, healthy man and his mother a sensible, stable woman. Both were on good terms with the patient's wife. There was one elder brother, in the Fleet Air Arm. There was no family history of mental or nervous disorder.

2). Early History and Development. Birth and infancy were normal. He was an average scholar, made friends and played games, and appeared a normal youngster. When he left school he was apprenticed to a motor mechanic, but at the age of 21, when war broke out, he went into an Admiralty Dockyard as an engineer's fitter, and remained there until he became mentally ill. Towards the end of the war he was sent to Simonstown, South Africa, for special training, which was never completed as the war ended. He volunteered for service at Singapore, where for the first time he had other men under him. Conditions were very difficult, and he broke down. After a spell in hospital in this country he was much improved, and resumed work at his home Dockyard.

3). Temperament. He was a cheerful and sociable young man, popular with his mates. He was possibly rather too conscientious, and always remained very attached to his home, but he was good company and much in demand as an accordion

player.

4). Sexual Life. Late in 1947 he married a very nice girl. Their married life was happy, and the first baby was expected in October 1948.

5). Summary of Causative Factors. He first broke down in Singapore, when faced with responsibility for the first time, and in difficult working conditions. His second illness followed an attack of influenza. Otherwise no adequate factors could be discovered, so his illness was presumably "endogenous".

#### CLINICAL MANIFESTATIONS.

He was brought home from Singapore in May 1947, and admitted as a voluntary patient to a mental hospital distant from his home. He had 2 E.C.T. treatments and a course of insulin shock. In September he returned home apparently well, but showed a disinclination to go out. However, he married and resumed work, and was well until he had influenza in August 1948. He then became very quiet and reserved, and felt that he could not concentrate on his work. He thought he was doing badly, but there was no report to that effect from his superiors. He often did not answer when spoken to, and spent much time sitting silently and smiling to himself. As he showed no sign of spontaneous improvement, psychiatric help was sought, and he was admitted to Barming Heath Hospital on 22/9/48.

On examination he was profoundly apathetic, detached, and withdrawn from contact with his

environment. He frequently laughed and grimaced in a fatuous way, but showed little capacity for emotional response. He spent much time listening to hallucinatory voices, but his account of what they said was vague and unilluminating. He said that while he was still at work, his mates made signs with their tools to indicate that he had venereal disease; he also made play on the word "tool" in reference to his penis, apparently to indicate that his mates discussed his married intimacies. His speech was incoherent and disconnected, but he apparently had vague ideas that efforts were being made to control his mind. He made no effort socially and was incapable of useful occupation. There was no change in his condition before electro-narcosis was used.

#### DIAGNOSIS.

Physical and serological examinations revealed nothing significant. There was no clouding of consciousness or memory defect to suggest an organic origin for his symptoms. His emotional reaction and mental content were not depressive, apart from his ideas about failing at work and his ideas about venereal disease. These, however, occurred in an emotional setting of thin resentment and were ideas of reference without depressive significance. His preoccupation with hallucinations, mannerisms and rapid progression to a vegetative state all indicated schizophrenia



of the hebephrenic type. A mild paranoid element was present, but formed a relatively insignificant part of the total picture.

#### TREATMENT.

He was given 18 treatments by electro-narcosis, three times weekly, starting on 29/11/48. He received atropin and thiopentone premedication. The electrodes were placed frontally and moved temporally during the course of each treatment. The average coma-dose was 125 mA.

He showed considerable sensitivity to thiopentone and on one occasion stopped breathing and developed a rapid, weak pulse before electricity was applied. With a smaller dose of thiopentone he tended to become restless. The course of treatment was not altogether straightforward, but the risks run were never serious and he retained no memory of the treatment.

#### RESULT.

He showed no change for better or worse as a result of electro-narcosis.

#### DURATION OF ILLNESS.

He had been ill for just over 3 months when electro-narcosis was begun.

Category 4. No 36.

CASE 98. Male. Admitted 25/10/48. Age 46.

AETIOLOGY AND PSYCHOPATHOLOGY.

1). Family History. There was no family history of mental disorder, apart from a brother who suffered from an anxiety state in 1944, presumed to be due to the flying-bomb attacks.

2). Early History and Development. He was a premature and delicate baby who was not expected to live. At school he was rather backward, but was not considered mentally deficient. When he left he could read and write, but not fluently. He could perform simple calculations and understood the value of money. He then did a number of unskilled factory jobs, at which he was regarded as a steady worker. His changes of work were all due to jobs coming to an end, and for nine years before becoming ill, he had been a labourer for one firm.

3). Temperament. He was a simple, quiet and orderly man, who did not drink and smoked only in moderation. He had few friends, but was a reliable and conscientious worker. Until his mother's death he lived with her and his three brothers; afterwards he lived with a married sister and his aged father. He always had a very sheltered and protected environment.

4). Sexual Life. He showed no interest in girls and never had a girl friend.

5). Summary of Causative Factors. He became ill after his job as a labourer came to an end. His breakdown was presumably due to his inability to adapt to a

change of circumstance in the early involutional period. This failure was the outcome of his inadequate and schizoid personality.

#### CLINICAL MANIFESTATIONS.

He pursued the even tenor of his life until his work came to an end in March 1948. He made no effort to get other work, but slowly lapsed into a state of inactivity, in which he had to be washed, dressed and fed. The resources of his home were insufficient for this to be tolerated for long, so he was admitted to Barming Heath Hospital on 2/10/48. His admission documents were out of order, so he had to be readmitted on 25/10/48.

He was mute, stuporose, and lost to his surroundings. He was intensely negativistic and resistive to all attention, although he could do nothing for himself. He was faulty in habits and required to be tube fed. He showed no change before the start of electro-narcosis, except that it became possible to feed him by hand.

#### DIAGNOSIS.

Physical and serological examination revealed nothing significant. In particular, there were no neurological signs of a space-filling lesion in the cranium. It was therefore felt that stupor with negativism of nearly 7 months duration could only be due to schizophrenia of the Katatonic type.

## TREATMENT.

He was given 8 treatments by electro-narcosis, three times weekly, starting on 29/11/48. He received atropin and thiopentone premedication. On the first occasion he was also given 15 mls of myanesin with satisfactory results, but trouble with this drug in other patients caused it to be discontinued. The electrodes were placed frontally and moved temporally during the course of each treatment. The average coma-dose was 155 mA. He was an emaciated man and only weighed 7 stone 2 lbs. During his 3 final treatments his pulse was weak and irregular, but responded to a lowering of the current level. On the day when he was due for his ninth treatment he had a resting pulse rate of 132 per minute and the volume was poor. Treatment was therefore discontinued.

## RESULT.

He showed no change for better or worse as a result of electro-narcosis. One month after it was finished his mental and physical condition was still the same.

## DURATION OF ILLNESS.

He had been ill for 8 months when electro-narcosis was started.



CASE 100. Female. Admitted 14/4/48. Age 23.

AETIOLOGY AND PSYCHOPATHOLOGY.

1). Family History. She came of a working class family, who lived in a poor quarter of South-East London. Her father drank excessively and was a bad husband and father in consequence. The mother was a diffident, passive woman, overcome by the patient's illness on top of her husband trouble. The patient had two elder sisters; one was killed by a flying-bomb and the other was a rough but hearty barmaid type. She was, however, obviously fond of the patient, and only too ready to do anything to help. There were also two younger brothers, tough and dirty youths, but quite normal denizens of their district. Apart from the father, there was no history of mental or nervous disorder.

2). Early History and Development. The home was unsettled and conditions were hard owing to the father's ways. The patient was not a nervous child, and was not observed to display any neurotic traits. She was, however, inclined to cling to her mother, in contrast to the other children, who "grew up tough". She was an average scholar, and then had a number of low grade jobs, including work in a cafe and a laundry. During the war she worked in a factory connected with the war effort, but her family had no idea what she did there. She eventually gave that up as her mental illness developed.

3). Temperament. From an early age she was a reserved, self-contained girl, inclined to cling to her

mother. She used, however, to care for her appearance and was reasonably cheerful. She made few friends of her own, but was quite happy to go to dances with her elder sister.

4). Sexual Life. She was always afraid of men, and never had any boy friends.

5). Summary of Causative Factors. There may have been a hereditary constitutional element, but the interaction of the home situation and her schizoid personality was probably more important. The precipitating factor was undoubtedly her experience of aerial warfare.

#### CLINICAL MANIFESTATIONS.

During the blitz the patient was petrified. She belonged to a fire-fighting party, but after a few hectic nights, she made straight for the shelter, and would not move for anyone, including the leader of her party. It is only fair to emphasise that she was only just 16 when the blitz began, and her corner of London was one of the worst hit of all. She became more and more self-contained and unresponsive and developed a habit of sitting with her fists clenched, screwing them from side to side. She managed, however, to keep at work until 1943, when her increasing apathy made it impossible. She was already in a fairly advanced state of deterioration when her sister was killed, so that was not related to the onset of her illness. Her parents kept her at home, hoping that rest and the end of the war would put matters right. For a time she was able to help her mother with simple

shopping, but she steadily deteriorated. She lost all interest in her appearance and used to sit about muttering and laughing to herself. The problem of personal hygiene eventually led to the doctor being called in, with the result that she was admitted to Barming Heath Hospital under certificate, on 14/4/48.

On examination she was inert, indifferent to her environment and incapable of social activity or useful employment. She showed profound affective failure and exhibited many mannerisms. She was preoccupied with hallucinatory voices and from time to time was impulsive. She expressed vague ideas about her food being drugged, and occasionally was negativistic. She believed her mind was controlled from outside, so that she could not help her actions. Her personal habits were faulty and she required much care and nursing attention. She made no spontaneous progress before electro-narcosis was tried.

#### DIAGNOSIS.

This was not in doubt when electro-narcosis was used. Physical and serological examination showed nothing abnormal. There was nothing to suggest an organic origin for her symptoms, and her emotional reaction and mental content were never characteristic of depression. Her inertia, preoccupation with hallucinations, mannerisms and mild impulsiveness were characteristic of hebephrenic schizophrenia.

## TREATMENT.

She was given 16 treatments by electro-narcosis, three times weekly, starting on 2/12/48. She received atropin and thiopentone premedication. The electrodes were placed frontally and moved temporally during the course of each treatment. The average coma-dose was 125 mA. No difficulties were encountered.

## RESULT.

She showed no change whatever as the result of electro-narcosis.

## DURATION OF ILLNESS.

She had been ill for approximately eight years when she was given electro-narcosis.



Category 4. No 38.

CASE 101. Female. Admitted 7/6/47. Age 25.

AEIOLOGY AND PSYCHOPATHOLOGY.

1). Family History. The patient's father was a heavy drinker and a brutal husband and father. The mother was a normal working-class woman with no illusions about the patient, but quite affectionate. She obtained a legal separation from her husband in 1942. There were nine children in all; apart from one who died in infancy, all except the patient were healthy and doing well. The elder ones settled at some distance from home in order to get away from their father. Both paternal grandparents drank heavily, and the father's only sister had been in a mental hospital for many years. A first cousin of the father's was also a chronic mental hospital patient.

2). Early History and Development. Birth was normal and she walked at 13 months, but did not talk until very late. At school she was dull and unresponsive, but was not regarded as defective. Although she used to play normally with her brothers and sisters at home, at school she used to stand about in the playground, refusing the invitations of her fellows to join in their games. She was not bullied or ill-treated. She left school at 14 from a low standard, but could read and write and understood the value of money. She was recognised to be "different" from the rest of the family, and was regarded as incapable of going out to work. She was kept at home doing domestic work and proved herself a good cook and useful with

a needle. She was quite capable of managing the house and freed her mother to go out and get work. She seemed to feel "left behind" when the last of her sisters got married in December 1946.

3). Temperament. She was a very reserved girl, with no friends, who clung to her mother. She used to brood over any grievance and had occasional outbursts of temper, in one of which she hit her mother. She had no life outside her home. She disliked the cinema and was not a churchgoer. Her only recreation was reading and she consumed large numbers of light novels. She always got on well with her brothers and sisters, who remained friendly and affectionate towards her.

4). Sexual Life. She showed no interest in boys and never had a boy-friend.

5). Summary of Causative Factors. There was presumably a considerable element of hereditary predisposition, and her early developmental situation was not favourable. She was of low intelligence, but not frankly defective. Although her personality was strongly schizoid from an early age, her adaptation in the home was satisfactory, until the conditions which gave meaning to her life came to an end with the dispersal of the family.

#### CLINICAL MANIFESTATIONS.

From September 1946 onwards she showed an increasing disinclination to go out, either for shopping or for walks. She said she had nothing to go out for. Gradually her housework deteriorated. She was as busy as

ever, but achieved less and less, and seemed to spend her time endlessly pottering. This process was accelerated after the marriage of her sister in December 1946. She lost interest in reading and gradually began to neglect her appearance. Shortly before her admission to hospital she often thought her mother was calling her when in fact she was not. She then complained that boys were peering in at her window, and became disconnected in speech. When she started knocking her head against the wall, action was taken and she was admitted to Barming Heath Hospital on 7/6/47.

She showed herself indifferent to her environment and very manneristic. She made no social advances and was incapable of useful occupation. She showed profound affective failure and was preoccupied with hallucinations. Her speech was incoherent and disconnected and she was often impulsive. She required constant supervision as regards her diet and toilet, but was liable to be resistive or negativistic. As time passed her loss of contact with reality became more pronounced; she became almost mute and her impulsive outbursts were more frequent.

#### DIAGNOSIS.

Physical and serological investigations revealed nothing significant. At no time did she show a depressive emotional reaction, and the picture was characteristic of well-developed schizophrenia. Her preoccupation with hallucinations, mannerisms, inertia and impulsiveness were typically hebephrenic.

#### TREATMENT.

She was given 15 treatments by electro-narcosis starting on 2/12/48, administered 3 times weekly. She received atropin and thiopentone premedication. The electrodes were placed frontally, and moved temporally during the course of each treatment. The average coma-dose was 120 mA. She showed a tendency to rapidity of the pulse during electro-narcosis; the rate varied between 120 and 140, but the rhythm was regular and the volume good. The rate dropped to 90 or below within five minutes of the cessation of treatment. No serious difficulties were encountered.

#### RESULT.

She showed no change whatever as the result of electro-narcosis.

#### DURATION OF ILLNESS.

She had been ill for 2 years and 3 months when electro-narcosis was started.



Case 105. Male. Admitted 11.8.48. Age 22.

AETIOLOGY AND PSYCHOPATHOLOGY.

1). Family History. He came of a family of small-holders and farm labourers. There was no history of mental or nervous disorder.

2). Early History and Development. He was a docile baby who showed no neurotic traits except occasional tantrums. He was somewhat backward at school and left at 14 while in Standard V; there was never any question of frank deficiency. From 1940 till 1942 he worked satisfactorily on his grandfather's small-holding. After that he was a timber-cutter for two years. He liked the work and was well thought of by his employer. From 1944 till 1946 he was in the Army and saw fighting in Germany.

3). Temperament. He was said to be full of life and mischief before joining the army and had many friends. There was no history of psychopathic traits.

4). Sexual Life. He never had any girl friends so far as his mother knew.

5). Summary of Causative Factors. His illness appeared to be due to the stress of war, acting on a simple personality of rather low intelligence. He would never speak about the war, but was said to have brooded a lot on a friend who was killed near him.

CLINICAL MANIFESTATIONS. Symptoms of abnormality were first noticed early in 1945. He became sullen and

suspicious and complained of being "mucked about" by the army authorities. He was depressed and on one occasion seriously considered shooting himself. He was eventually admitted to a military psychiatric hospital and later discharged as a "psychopathic personality" with a disablement pension of 8/6d per week. No record of his illness could be obtained, so the grounds for regarding him as a psychopathic personality were not discovered. Nothing in his history supported the use of the term in its strict psychiatric sense.

When he came home he was moody and indifferent to his environment. By day he used to wander about in an aimless manner; by night he laughed and talked to himself when he should have been asleep. He had occasional outbursts of rage in which he shouted abuse at anyone who happened to be handy. He would not mix with others at all, and was quite incapable of work on ordinary terms. He did a labouring job for a year, but was only kept on for his parents' sake and finally had to be dismissed.

On admission to Barming Heath Hospital he showed severe affective failure. He showed no interest in his appearance or in his fellows. He often grinned and grimaced for no apparent reason, and talked to himself quietly if he thought he was unobserved. He made no effort to work, but felt that there was nothing wrong with him, and that therefore there was no need for him to be in hospital. He showed no change up to the time when electro-narcosis was started.

DIAGNOSIS. Important physical factors were excluded by clinical and serological examinations. There was no evidence of emotional reaction or mental content of a depressive type, apart from his suicidal inclination at the very beginning of his illness. The history and clinical picture were characteristic of a schizophrenia of the simple type when treatment was administered.

TREATMENT. He was given seventeen treatments by electro-narcosis three times weekly, starting on 22.9.48. He received atropin and thiopentone premedication. During his first five treatments the electrodes were placed frontally and the average coma-dose was 155 mA. Thereafter the electrodes were moved during treatment and the coma-dose reduced to 135 mA. No difficulties were encountered.

RESULT. He showed no change whatever as a result of electro-narcosis.

DURATION OF ILLNESS. This was approximately three years and six months at the time he was given electro-narcosis.

Category 5. No 1.

CASE 9 Male. Admitted 12.12.47. Age 33.

AEIOLOGY AND PSYCHOPATHOLOGY.

1) Family history. The patient's paternal grandfather suffered from bouts of depression and eventually hanged himself. His father was emotionally unstable; he was fussy and agitated about the patient's illness, and wept rather freely about it. The mother was a sensible, balanced woman. The patient was the youngest of three boys. All were quiet, but only the patient displayed psychotic symptoms.

2) Early History and Development. He was a healthy infant and was clever at school. He was reasonably good at games and got on quite well with other boys. When he left school he became a bricklayer, but at the time of his admission to hospital he had done no work for nearly four years owing to an occupational dermatitis.

3) Temperament. From an early age he was quiet and seclusive. He made few friends, but to those few he was affectionate and demonstrative. He was extremely sensitive to criticism and easily hurt, especially by any reference to his small size. His mother described him as living in a world of his own, but he was fond of doing things with his hands and was useful with tools. He was very abstemious in habits.

4) Sexual Life. He was shy and awkward in the company of girls and showed no interest in them.

5) Summary of causative factors. A hereditary and



constitutional element was almost certainly present. He showed well marked schizoid traits from an early age, so was clearly strongly predisposed to break down. The cumulative effect of a long spell of unemployment on a young man who was good with his hands was probably the main precipitating cause.

CLINICAL MANIFESTATIONS. He was said to have had a nervous breakdown when he was eighteen years old. He was off work for a time, but recovered fully without specialist or hospital treatment.

He showed no further symptoms until about a fortnight before his admission. He spent his time while off work quite happily gardening and toy-making, but suddenly stopped doing this, became worried and sleepless, and started to refuse his food. He said that he feared being poisoned and thereby being forced to hurt his mother. At first he was terrified of the idea of going to hospital, but when he had got used to it he was equally terrified of the possibility of being allowed to go home, in case he should then be forced to hurt his mother.

Once in hospital, he told a somewhat incoherent and involved story, over and over again. He said that a girl who lived down the road had fallen in love with him. (This was quite untrue- she hardly knew of his existence). After this happened, he had a cup of coffee in a milk-bar and all sexual feeling and power left him. He said that something had been put in the

coffee to make him mad and cause him to hurt his mother. He also felt that other people could influence his thoughts and control his actions, as a result of the poison in the coffee. He also heard a voice, but wasn't sure what it said. On examination, apart from his bouts of anxiety, he showed thinning of affect, and was puzzled and bewildered rather than angry or resentful. He was stiff in manner and chose his words oddly, with the result that his speech was curiously stilted. He gave the impression that neologisms or a word salad would appear at any moment, but in fact they never did. Shortly after admission he became very excited and impulsive. He shouted incoherent nonsense, stripped his clothes off and required to be nursed in a single room. This state continued until he was given electro-narcosis.

DIAGNOSIS. The presence of important organic factors was excluded by clinical and serological examination. The possibility of delirium due to toxic causes was especially borne in mind owing to his dermatitis. The idea was discarded as he did not show any clouding of consciousness or serious memory defect. Depression was ruled out by the absence of a characteristic affective reaction or of depressive content. During the excited phases, mania had to be considered, but he showed no elation acceleration or distractibility. The diagnosis of

schizophrenia was reasonably established. In spite of the supervention of excitement he was regarded as essentially of the paranoid subtype owing to the persistence of his delusions and the presence of anxiety attacks.

TREATMENT. He was given a course of twelve treatments by electro-narcosis, three times weekly, starting on 30.1.48. He received atropin premedication only. The electrodes were placed temporally and the average coma-dose was 115 mA. When his course was finished he said that he had more than once felt the initial shock. He indicated that it was unpleasant, but nothing to make a fuss about.

RESULT. Improvement was noticed after four treatments and continued steadily until the end. He became more alert, emotionally active and interested in his environment. His delusions and ideas of passivity cleared up, and he was no longer hallucinated. He started to work usefully and became quite sociable. He gradually regained his stability and self-confidence and on 6.5.48, fourteen weeks after starting electro-narcosis, he left hospital. His illness was considered to have remitted completely.

On 10.8.48. he was re-admitted under certificate. He had been symptom-free until three weeks previously; he then became suspicious and resentful, saying that everyone was hostile to him. He became quite

unmanageable at home. He was more excitable and impulsive than on his first admission. The clinical picture was more dominated by vivid hallucinations, but the paranoid substratum was still clearly discernible.

He was given two further treatments by electro-narcosis on the 8th and 11th of November with pentothal anaesthesia. After the second he banged his head against the wall and bruised his forehead and temples, and so effectively prevented further treatment. It was possible that this behaviour arose from the memory of the initial shock during his first course, but hardly likely in view of his reaction at the time. He was probably displaying a more general negativism, but in view of the other possibility, the idea of resuming treatment at all was abandoned.

DURATION OF ILLNESS. There was a clear history of two months duration before electronarcosis was started.



Category 5. No 2.

CASE 59. Female. Admitted 6/3/48. Age, "About 40".

AETIOLOGY AND PSYCHOPATHOLOGY.

1). Family History. She was born in Australia, so most of the information given here was derived from the patient herself. There was no family history of mental disorder.

2). Early History and Development. Her childhood was not happy. Her mother was not merely undemonstrative, but actually jeered at any demonstration of affection. Her father was really a demonstrative man, but allowed himself no expression of feelings on account of his wife's attitude. The patient vividly remembered an incident when she was about four years old, which seemed to her to epitomise the family atmosphere. She went with her family to a fair, and thought she was lost. She was struck with panic, and then saw her mother and brothers behind her, roaring with laughter at her distracted behaviour.

She was bright at school, had a university education, and qualified as a barrister. There was no shortage of money in the family, and her practice of the law was rather desultory. In 1936 she came to Europe, and spent a lot of time in Germany and Switzerland, but was very reticent about this period of her life. She came to England just before the war broke out, and worked in a censorship office in London for the duration. When the war was over she joined the Women's Land Army for a year, and then became a maid in a very small voluntary hospital in Kent. The matron was desperate for staff, and

took her on without asking any questions or demanding references. She was obviously quite out of place in the kitchen, and was peculiar in her behaviour, but she did her job, so there the matter rested.

3). Temperament. Objective information was scanty, but she was cultured, well-educated and affectionate, and not without charm. When well she could talk interestingly on a wide range of subjects, and showed an original turn of mind.

4). Sexual Life. She remembered her mother frequently telling her she should never marry. She believed this advice was given out of consideration for a hypothetical husband, as in her 'teens she was untidy in her ways, and plain and spotty in appearance.

5). Summary of Causative Factors. Definite information was lacking, but her developmental situation was not favourable. She left Australia when her father died, and in the early stages of her illness she talked remorsefully about her relations with her mother, but never disclosed any details. She gave the impression of being a very affectionate and warm-hearted person, whose mask of devil-may-care bachelor girl was wearing a little thin.

#### CLINICAL MANIFESTATIONS.

She was peculiar in manner when she first came to Kent in 1946. Her official reason for working as a kitchen-maid was that she wanted to help in the world. She frequently told the matron of the hospital that she was sure she was going mad.

On numerous occasions she said that she knew her mother was ill, although she had received no mail, and admitted that her knowledge had not come by normal channels. She accused the matron of keeping back information on the subject, and several times gave notice. She was persuaded to withdraw it, however, partly because of her usefulness, partly because the matron did not want to see her thrown on her own resources when her mental state was so unstable. The patient herself said that during her two years at the hospital, she had a feeling of tremendous mental and physical inertia. She also complained that when she wanted to say something, she found herself saying the opposite. She had a sense of giving a false impression of herself, and of picking up a wrong impression of her fellows, so that she felt herself slipping more and more out of touch with other people, although she desperately wanted to be friendly.

When she first came to Kent, she was very particular about her appearance. She bought shoes at £5-5-0d a pair, and wore very expensive tailor made clothes. Towards the end of 1947 she became careless of her appearance, and crisis threatened in the kitchen when one of her colleagues called her a slut. The whole situation came to a head early in March 1948; she came in one day in an excited state, saying that her mother was in the town. She stated that her mother had passed her on the hospital stairs without recognising her.

She proved impossible to control, and was admitted to Barming Heath Hospital under certificate.

On examination she showed little interest in her environment, and spent her time gazing into space with a puzzled expression. Her speech was incoherent, and at times frankly incomprehensible. She showed profound affective failure and displayed curious mannerisms. She often grimaced and laughed in a facile but explosive way. She said she constantly heard her mother's voice, but did not reveal what it said. Her thought content was vague, and her thought processes were slow due to serious blocking. She believed that other people were discussing her in a disparaging way, and said that she proposed to take legal action to punish them. She felt that her mind was being influenced from outside, so that other people could control her actions. Her conduct was erratic from the first, and frankly impulsive behaviour soon made its appearance. She made no attempt to mix socially, and was incapable of occupying herself. Her condition showed no change before electro-narcosis was used.

#### DIAGNOSIS.

Physical and serological investigations revealed nothing significant. At no time did she show a depressive emotional reaction or mental content. During her excited phases there was no elation or emotional warmth, nor was she accelerated. The clinical picture was, in fact, typically schizophrenic.



Her preoccupation with hallucinations, explosive laughter, mild impulsiveness and progression to a state of inertia led to her being regarded as a hebephrenic type. Her ideas of reference were not prominent.

#### TREATMENT.

She was given a course of 5 treatments by electro-narcosis between 13/5/48 and 25/5/48. On the first 4 occasions she received atropin and sodium amytal premedication. On the last of these treatment had to be terminated after 3 minutes, as narcosis was inadequate and the patient became restless. On the last occasion she was given thiopentone. The electrodes were placed frontally, and the average coma-dose was 135 mA.

On 15/7/48 she was given a second course, three times weekly, of 15 treatments. She received atropin and thiopentone premedication. The electrodes were placed frontally, and the average coma-dose was 130 mA. No difficulties were encountered.

#### RESULT.

After her first course she was much improved. She was brighter and more alert. She was no longer hallucinated and her ideas of reference and passivity had cleared up. She was beginning to mix with others and was usefully occupied. She still showed emotional thinning, and her thought processes were slow, and accompanied by much knitting of brows. She gave a

most interesting account of her sensations after electro-narcosis. She said she had the most delightful sensation of relaxation, like being on a mental water-bed. She felt that her mind was being rested in a way that had not happened for years. This feeling was present on awakening, and slowly faded in intensity, but did not altogether disappear before the next treatment. The effect lasted for 10 days after her last treatment, during which time she felt in a happy, dreamy state. Then, quite suddenly, she felt fully in touch with her surroundings and, to quote her own words, "Purged of all hysteria".

Unfortunately this state of affairs did not continue. Some 7 weeks after her first course was over she was clearly becoming detached once more, and spent much time ruminating on unpleasing fantasy. She was therefore given her second course, and improved to a greater degree than after the first. She was still somewhat stiff in manner and showed considerable flattening of affect. Superficially her thought processes were satisfactory. She worked well in the occupation department, and conversed freely and amusingly on neutral topics, but showed signs of strain when given quite simple tests, such as "Serial sevens". She was, however, able to go on leave with a friend, and mixed freely in the social activities of the hospital. Arrangements were made for her to return to Australia on a hospital ship, but at the last minute she refused to go. Alternate arrangements were made

Category 5. No 31  
for her future in this country, and she left hospital on 16/11/48. She was regarded as having made a social recovery.

On 9/12/48, however, she was readmitted, once more anergic, preoccupied with fantasy and asocial in her attitude. She was therefore classified as having relapsed.

#### DURATION OF ILLNESS.

Signs of abnormality were first noticed when she came to Kent in March 1946. She had therefore been ill for 2 years and 2 months when electro-narcosis was started.

Category 5. No 3.

CASE 75. Female. 27/7/48.. Age 35.

AETIOLOGY AND PSYCHOPATHOLOGY.

1). Family History. The patient's father was a Medway waterman, who died from cancer at the age of 73. He was described as a good, kindly, generous and placid man, except during his periodic drinking bouts. The mother was still alive, aged 69. She was said to be a regular "Tartar", with a tongue like a scorpion, who ruled the family. A maternal aunt was in a mental hospital for 5 years from 1928 to 1933. She was still alive and said to be abnormally quiet. The patient was the third of five children. The eldest, a man, was normal. Then came an elder sister who was unstable, moody and inclined to depression, with a reputation for reacting quickly to alcohol. After the patient came another girl, said to be restless, fidgetty and a slattern. The youngest was a boy, who was in a mental hospital for a time in adolescence but later became a stevedore. He was quiet, reserved and solitary in his ways.

2). Early History and Development. As a child she was said to be very sensitive and was very spoiled and indulged by her father. She was an average scholar. After leaving school at 14 she worked in domestic service for 3 years and then got a job in a cafe, which she kept until she married. She earned a reputation as a good worker.

3). Temperament. She was said to have been a happy youngster, always active and singing about the house. She never settled down to sew, knit or read, but



always to be busy. As she grew older she seldom went out. She was not a churchgoer, she never went to the pictures and did not dance. She had only one girl friend, but she seems to have held her own in the superficial backchat of the cafe. She was said to be very sensitive to criticism and was always fastidious and particular about her appearance. During the war she never went to the shelter, but stayed in bed whatever was happening outside. On one occasion a neighbour said he had seen her husband blown up, but she refused to believe him, and took it as a matter of course when her husband turned up unhurt.

4). Sexual Life. During the war she married an N.C.O. in the Marines. He was a prisoner of war for nearly a year. He gave the impression of being an immature, neurotic man, with a general grudge against all and sundry. He felt that he was unappreciated and insufficiently "mothered" by his wife. He was a very jealous man, and domestic tension had been steadily rising for well over a year. There were two children, a boy born in 1943 and a baby who died in 1947.

After the death of the baby, veiled suspicions came into the open, each partner openly accusing the other of infidelity. It is doubtful whether there was any truth on either side, but the patient used to talk about the married service couples who had stayed in the house while the husband was away during the war. She also hinted at the possibility of various other paramours, without ever admitting anything. The result was a series of bitter quarrels, ending

in passionate reconciliations, in which the wife said she was left unsatisfied, because her husband used a sheath. This state of affairs gradually merged into frank mental illness on the wife's part.

5). Summary of Causative Factors. There was clearly a strong constitutional predisposition of a hereditary nature. Early developmental conditions were also unfavourable; the home atmosphere was far from tranquil and the mixture of maternal harshness and paternal spoiling was a poor preparation for a well-adjusted adult life. The picture of her life before marriage suggested adaptation of a purely superficial type, maintained as long as powerful emotional drives were not involved. Her marriage was in many ways the outcome of her early experience. A friend made the suggestion that she "fell for" the uniform of the Royal Marines, without the discrimination to judge the man who wore it. This judgment may well have been just. As the story of her marriage unfolded in hospital, it became clear that she entered wedded life with little sexual knowledge and was at first frigid and terrified of pregnancy, but later became quite insatiably passionate and played on her husband's jealousy as the surest method of rousing him to passion. This tended to bear out the interpretation of her personality outlined above.

#### CLINICAL MANIFESTATIONS.

Following the death of her baby in June 1947, her behaviour became so extravagant as to pass the limits

of the normal. There were almost daily scenes in which she made her husband swear on the Bible that he had not been unfaithful. Her housekeeping deteriorated and she lost all patience with the boy. She often shouted and swore at him, and was liable to spank him for little reason. Gradually her speech became disconnected, and she neglected herself and her appearance. Her husband took over the housekeeping, which only made matters worse. Finally, in June 1948, she began to accuse a neighbour of seducing her husband. As July approached, she became obsessed with the idea that it was her unlucky month, and that something dreadful would happen to her. As it turned out, she was admitted to Barming Heath Hospital on July 27th.

On examination, she was morbidly preoccupied with subjective experience, and showed no interest in her environment. She sat in strange attitudes gazing vacantly into space, occasionally whispering to herself, under her breath. She showed severe thinning of affect, with residual suspicion and resentment. Her speech was laconic and off-hand, and her answers often bore no relation to questions asked. She admitted hearing voices giving her commands, which, she said, spoiled her life. Often she would knock at the door of the clinical room, saying that she had heard the doctor calling her. Her thought content was vague and bizarre, expressed in incoherent language. Thought blocking frequently occurred, and she believed outside influences played

on her mind and controlled her actions. She was incapable of social activity or useful occupation. She showed no real change before electro-narcosis was begun.

#### DIAGNOSIS.

Physical and serological investigations revealed nothing significant. The possibility of organic delirium was ruled out as in her more accessible periods she showed no clouding of consciousness and no defect of memory. At no time was she elated or accelerated. At first her apathy and apparent retardation which was really a manifestation of thought-blocking, led to serious consideration of the possibility of a depressive psychosis, but it soon became clear that her predominant emotional tone was of suspicion and resentment. Her thought disorder, moreover, was characteristically schizophrenic. The thin affect, morbid rumination and ill-defined thought content pointed to paranoid schizophrenia rather than a predominantly paranoid psychosis.

#### TREATMENT.

She was given 25 treatments by electro-narcosis, three times weekly, starting on 19/8/48. She received atropin and thiopentone premedication. For the first 17 treatments the electrodes were frontally placed and the average coma-dose was 145 mA. On subsequent occasions the electrodes were placed frontally and moved temporally during the course of treatment. The average coma-dose was then 130 mA.



No difficulties were encountered during her course of electro-narcosis.

#### RESULT.

During her course of electro-narcosis she made slow but steady progress. When it was over she was much brisker and more alert. She was interested in her environment, was usefully employed, and made the most of the social opportunities afforded her. Her power of emotional response was much greater and she was amiable and co-operative instead of being suspicious and resentful. She was not hallucinated, and no longer expressed ideas of passivity. Her manner was still stiff and her thought content vague and idiosyncratic. She had not gained insight into her former state.

She continued to improve while attending the occupational therapy department, but unfortunately her husband ordered her discharge prematurely on 9/1/49. He also refused such help as the psychiatric social worker might have been able to provide in easing the home circumstances. The outcome could be foreseen without difficulty, but at the time she left hospital her improvement was sufficient to rate as a social recovery.

Ten days later her husband rang up to say that he could not manage her, so she was readmitted on 22/1/49. She had by no means relapsed to her former state. She was again suspicious and resentful and her conduct was erratic, but there was no positive evidence of hallucinations and she did not express

ideas of passivity. She accused her husband of being hostile towards her and of treating her badly, but such statements hardly had the force of delusions. Within a few days of admission a noticeably more co-operative attitude became apparent. The appropriate classification in her case was 'relapse after achieving social recovery.

#### DURATION OF ILLNESS.

She had been ill for one year and five months when electro-narcosis was begun.